PULP & PAPER

NOVEMBER 1957

How to Improve Packaging
page 39

List of Industry Mergers
page 41

Engineering Conference
page 56

"I hated to do it, but..."

GLAD YOU WERE ABLE TO MAKE THE EARLY PLANE BACK, TOM. I HATED TO PULL YOU OUT IN THE MIDDLE OF THE CONVENTION, BUT...
DON'T TELL ME, I CAN GUESS -- WE'RE HAVING STARCH COATING TROUBLES AGAIN?
I'M AFRAID THAT'S IT, TOM. AND WE'RE GOING TO HAVE TO DO SOMETHING ABOUT IT SOON. OUR COSTS ARE GETTING WAY OUT OF LINE.
WELL, JACK, MAYBE THE SINGLE DAY I DID SPEND AT THE CONVENTION WASN'T WASTED AFTER ALL...
...I PICKED UP A TIP THAT MIGHT SOLVE OUR PROBLEM AND SAVE US SOME MONEY TO BOOT. A FELLOW AT LUNCH WAS TELLING ME HIS COMPANY IS USING U.F. CONCENTRATE 85 FOR THEIR WATER RESISTANT FILMS AND ADHESIVES.
U-F CONCENTRATE 85--- WHAT'S THAT, TOM?
IT'S LIQUID, CONCENTRATED UREA-FORMALDEHYDE. THEY ADD IT TO THE STARCH, EITHER BEFORE OR AFTER COOKING. IT'S GIVING THEM BETTER WATER RESISTANCE AT LOWER COST.
SOUNDS GOOD---ON PAPER. BUT HOW ABOUT IN THE PLANT--- IS IT TRICKY TO WORK WITH?
APPARENTLY NOT. HE SAID THE STARCH SLURRY CAN BE USED IN EITHER ACID OR ALKALINE pH RANGES, AND VISCOSITY IS EASIER TO CONTROL.
SAY, TOM, IT SOUNDS LIKE SOMETHING WE SHOULD GET ON TO. DID HE SAY WHO MAKES THIS U-F CONCENTRATE 85?
YES, ALLIED CHEMICAL. THEIR NITROGEN DIVISION PEOPLE GAVE HIM A LOT OF TECHNICAL HELP. LET'S GIVE THEM A CALL.

cut starch coating costs with U.F. Concentrate 85

Starch coatings and adhesives made with Allied's U.F. Concentrate 85 cost less, do a better job. In coatings, U.F. Concentrate 85 reduces viscosity, permitting an increase of solids content with reduced drying time. Resulting films and adhesives have increased water resistance; sizing has better visual density, greater burst strength and sheet capacity. In addition, U.F. Concentrate 85 offers some extra savings in material handling costs. A technical specialist from Allied's Nitrogen Division will be glad to give you full details.

UF3-25-1

Allied Chemical — Nitrogen Division

40 Rector Street, New York 6, N. Y.

Ethanolamines • Ethylene Oxide • Ethylene Glycols • Urea • Formaldehyde • U. F. Concentrate—85 • Anhydrous Ammonia • Ammonia Liquor • Ammonium Sulfate • Sodium Nitrate • Methanol • Nitrogen Solutions • Nitrogen Tetroxide • Fertilizers & Feed Supplements

A Rice Barton TRAILING KNIFE COATER Making Money . . .

Because it's less expensive to purchase — to install — to maintain.

Because it eliminates normal coating difficulties such as orange peel and turkey tracks.

Because it's producing *more, higher quality* coated paper faster than any other coating equipment available today.

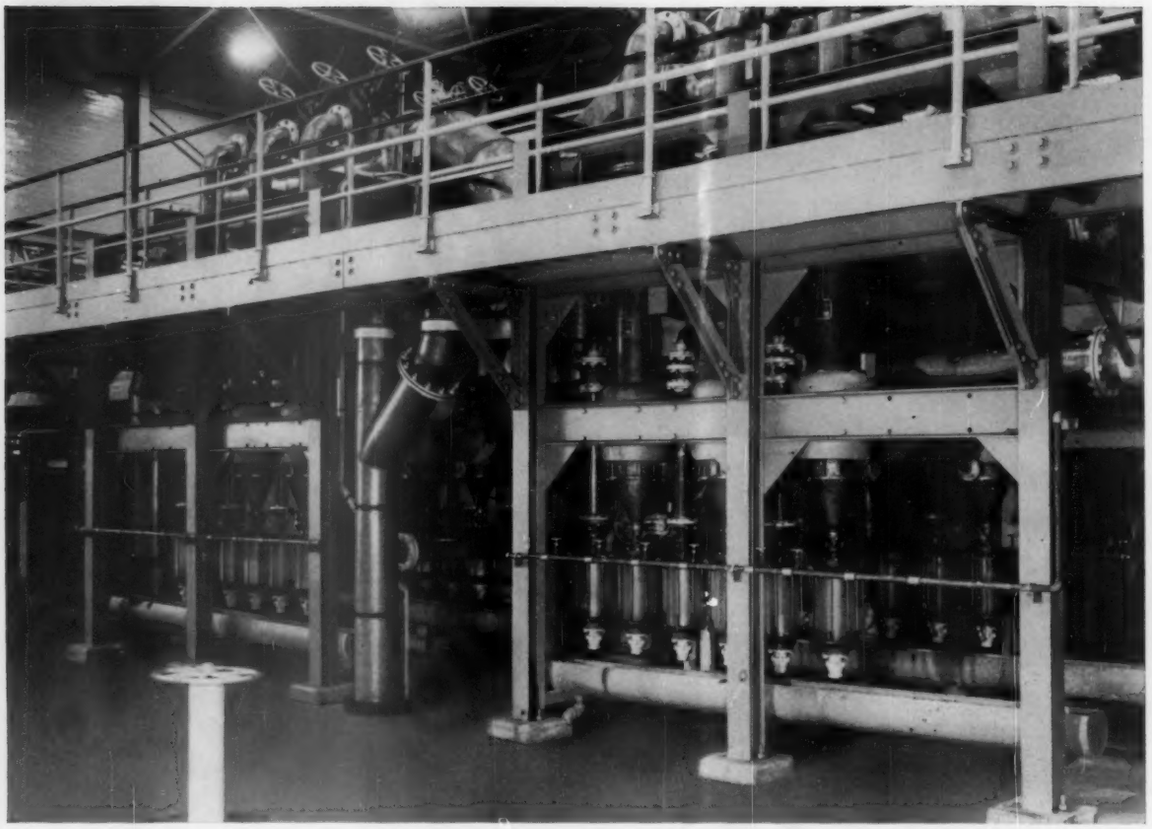
RICE BARTON

RICE BARTON CORPORATION

Worcester, Massachusetts

Paper Machine Builders Since 1837

West Coast Distributor: **Ray Smythe** . . 511 Park Building • Portland, Oregon



KING SIZE protection for the paper machine — and for the quality and uniformity of its output

This big battery of KING SIZE DIRTECS is guarding the entire stock output of one of the largest and best equipped mills in the world. It is keeping dirt, sand, metal particles and grit out of the paper and away from machine wires and roll surfaces.

Each *king size* Dirtec handles as much as 1200 gallons per minute.

Where volume of dirt is heavy, as in board stocks, Dirtecs may be equipped with automatic dirt evacuators.

Ask for recommendations, layouts and estimates.

BIRD MACHINE COMPANY

SOUTH WALPOLE, MASS.

REGIONAL OFFICES: EVANSTON, ILLINOIS
PORTLAND, OREGON • ATLANTA, GEORGIA

Canadian Manufacturers of Bird Machinery
CANADIAN INGERSOLL-RAND COMPANY, Limited, Montreal

PULP & PAPER

Reader's Guided Tour

VOLUME 31
NUMBER 12

Retailers Look at Packaging 39

A survey by the Folding Paper Box Association reveals what opportunities food retailers see for more packaging, what current problems are

Inflated Rubber Dunnage Protects Shipments 40

First story and pictures of new U.S. army-sponsored dunnage which is reducing shipping damage for 15 paper and board mills

Over 150 Mergers and Acquisitions 41

Tabulation prepared by PULP & PAPER of mergers and acquisitions that have taken place recently in pulp, paper, paperboard and converting industries

DRYDEN SUCCESS STORY 42

Detailed story of how Canadian mill has shifted product emphasis from paper to bleached kraft pulp and built a virtually new mill in the process

Bleach Plant 45
Chemical Preparation 46
Water Filtration 48
Wood Preparation 49
Digesters 49
Washing-Screening 50
Recovery and Power 51
Causticizing 52
Machine Room and Finishing ... 52

Converting Plant Has a New Look 54

Many improvements in equipment and plant layout at KVP's Harvey Paper Products

TAPPI Engineering Report 56

Summary of highlights from 12th Annual Engineering Conference held in Cincinnati and sidelights collected by P & Ps on-the-spot editors

Overlays Here to Stay 56
Mill Noise Can be Silenced 57
How Good are Dryers? 58
Salt Cake Pneumatic Conveying . 58
Where Aluminum is Used 59
Nicholson Emphasizes Research . 59
Engineering Chit-Chat 60
New Pump Sparked by Mill Man. 61
New NSSC Recovery Process 62

Laboratory Expanded 1200% 55
New Flash Drying Pulp Dryer 64
New Continuous Digester 64
Smooth Startup at Hodge 65
Machinery for Boise Cascade 65
Swedish Strawboard Machine 64

● **PULPWOOD SECTION**

Dixie's Champion Pulpwood County 116

"Biography" of Clinch County, Ga., where at least 13 mills find raw material, and how it has changed during the last twelve years

How Logging is Done for Dryden 121

Pulpwood production intensified as mill expansion demands 100,000 additional cords per year—two-thirds of wood comes by water, one-third by truck

How to Reduce Power Saw Accidents 124

● **OTHER DEPARTMENTS**

The Editor Reads His Mail 5
Monthly Report 7
World Pulp and Paper News 15
Strictly Personal . . . news of people 139
New Equipment and Supplies 157
The Last Word—P&P Editorial Views 178

Woodpulp solves "morning thump" . . . Imagination in research . . . Behind the scenes with a P&P editor

CIRCULATION DEPT., 500 Howard St., San Francisco 5, Calif. C. C. Baake, Circ. Mgr. Send subscription orders and changes of address to PULP & PAPER, above address. Include both old and new addresses.

RATES (including World Review Number): U.S., Canada and Latin America—1 yr., $4; 2 yrs., $6; 3 yrs., $8. Other countries—1 yr., $5; 2 yrs., $8; 3 yrs., $11. Sterling area orders may be sent to: Harold P. deLooze Ltd., 4 Princess Mansions, Princeway Parkway, Northenden, Manchester 22, England.

PULP & PAPER is published monthly, except July when publication is semi-monthly, at Bristol, Conn., by Miller Freeman Publications, Incorporated. Entered as second class matter, Dec. 4, 1951, at Post Office, Bristol, Conn., under Act of March 3, 1879.

COPYRIGHT, 1957, by Miller Freeman Publications, Incorporated. Contents may not be reproduced without permission.

POSTMASTER: Send form 3579 to Circ. Dept., PULP & PAPER.

Now!

Whiter Papers

that don't cost a more!

Without an extra cent of cost, you can get *whiter* rosin-sized papers—by just specifying your usual commercial grades of rosin size *from Cyanamid.*

Here's why. Cyanamid's new manufacturing facilities are producing lighter rosin sizes—the lightest you've ever seen. This unprecedented improvement in rosin size quality makes possible upgrading of your paper products or reduced costs on whitening agents. Your Paper Chemicals representative can give you the whole story.

HELP WANTED?

REWINDING BOOSTED 50%

A southern mill was troubled with scuffing and "seizing" of butcher's wrap when rewinding into small rolls. Adding ALWAX* 251-S Wax Size to the beater at 6 lbs. per ton of paper cleared up the trouble and rewinding speed was upped 50%.

STABLE RESIN SOLUTIONS

Mills find it handy to maintain stock solutions of wet-strength resin for occasional use on the tub size to keep pick test on a high level. PAREZ® Resin 620 in a 5 to 15% solution has proved in storage tests to have indefinite stability with no gelling or hydrophobing.

DYE COSTS DROP ONE THIRD

When a western mill started using small amounts of ACCOCEL® 741 Dispersant as a mordant in bleached stock, it was found that only two thirds of the basic dye was required. Another gain was the improved color uniformity.

YOU NAME IT

At Cyanamid, problems are the "go-ahead" signal for experienced paper chemists to go to work. Your Paper Chemicals representative is your contact with this excellent service and the largest-in-the-industry line of chemical products behind it. See him—and *you* name it!

IMPROVED WAX PICK

Excellent results were obtained on 60 lb. white envelope paper when 15% of the size press starch was replaced by ACCOSTRENGTH* 2386 Dry Strength Resin. Wax pick went from 13 to 18, with corresponding improvements in tensile, mullen and fold. Easiest method is to dissolve resin at room temperature then add starch and enzyme, followed by usual processing to convert the starch.

*Trademark

CYANAMID

AMERICAN CYANAMID COMPANY PAPER CHEMICALS DEPARTMENT
30 Rockefeller Plaza, New York 20, N. Y.
In Canada: North American Cyanamid Limited, Toronto and Montreal

LARGEST SUPPLIER OF CHEMICALS TO THE PAPER INDUSTRY

PULP & PAPER

ALBERT W. WILSON — Editor
MAURICE CASTAGNE — Eastern Editor
WM. F. DIEHL JR. — Southern Editor
LOUIS H. BLACKERBY — Western Editor
RAUL RODRIGUEZ — District Editor
C. L. SHAW — Canadian Edit. Director

RALPH R. DAVID — Sales Manager
M. F. BOSWORTH, KENNETH A. JOHNSON — Assistant Sales Mgrs.
STUART F. LEETE — District Mgr.

STEPHANIE POLLITZER — Prod. Mgr.

Correspondents Around the World

UNITED KINGDOM—Edwin F. J. Dean and F. H. Llewellyn Thomas; FRANCE—R. Esselin; WEST GERMANY—Dr. Friedrich Dorn and Dr. E. Fischer; FINLAND—Juoko Koljonen; NORWAY—Oyvind Nossen; SWEDEN—Mikko Simonen; SWITZERLAND—Siegfried Aeschbacher; AUSTRIA—Karl Adamik; BELGIUM—William F. Boks; NETHERLANDS—Henk Voorn; DENMARK—E. Persson; ITALY—Dr. Pietro Ghisone; SPAIN—Antonio de Sabates; JUGOSLAVIA—J. Zivkovik; JAPAN—Motoki Matsunaga; INDIA—Dr. R. V. Bhat and S. C. Laharry; PHILIPPINES—A. A. Adamson; AUSTRALIA—C. V. Gray; NEW ZEALAND—A. R. Entrican; SOUTH AFRICA—Hans Baars and J. E. Henderson; MEXICO—Carlos Garcia Robles; ARGENTINA—Julio Cesar Lera; BRAZIL—Dr. L. J. Rys and Carlos Benko; CHILE—Francisco Schnake S.; VENEZUELA—M. Rivers; URUGUAY—Juan Carlos Raffo Fravega; CUBA—Armand Chavez Clavero; TAIWAN—Ni-Hung Chang; ISRAEL—M. D. Cohen.

A Miller Freeman Publication

WILLIAM B. FREEMAN — President
LAWRENCE K. SMITH — Vice President
MILLER FREEMAN JR. — Secy-Treas.

Office of Editor
1791 Howard St.
Chicago 26, Ill.
ROgers Park 4-3420

Advertising & Production Office
370 Lexington Ave.
New York 17, N. Y.
MUrrayhill 3-9294

Atlanta 19, Ga.—2900 Winding Lane, N.E., ME 6-2385
Cleveland 3, Ohio—4500 Euclid Ave. EXpress 1-4180
Seattle 4, Wash.—71 Columbia St., MA 1626
Vancouver 3, Can.—402 Pender St., W., MA 7287
Portland 4, Ore.—534 SW 3rd Ave., CA 3-6348
San Francisco 5, Calif.—500 Howard St., EX 7-1881
Los Angeles 65, Calif.—3501 Eagle Rock Blvd., CL 5-7194
London, W. 1, England—M. F. Holsinger, 25 Montague Sq.
Manchester 22, England—4 Princess Mansions, Princeway Parkway, Northenden

MILLER FREEMAN PUBLICATIONS

THE EDITOR READS HIS MAIL

Address letters to The Editor, PULP & PAPER, 1791 Howard St., Chicago 26, Ill.

Asks About Bamboo

—Bahia, Brazil

Editor: We are very much interested in using bamboo for manufacturing of paper pulp and eventually paper. We would like to learn anything that we may on the growing of different species of bamboo and its application on paper industry.

CHARLES G. HASLER
Euluz S/A, Av. Tiradentes
45-Salvador

From Minnesota and Mexico

Editor: You publish an excellent magazine and I enjoy reading it.

J. H. DAVIDSON
Chief Engineer
Minnesota & Ontario Paper Co.

—Mexico City, Mex.

Editor: I would certainly hate to miss PULP & PAPER. I have always enjoyed it.

MITCHELL THOM
Production Mgr., Paper Mill
Empaques de Carton "United" S.A.

More World Review Bouquets

Portland, Ore.

Editor: . . . terrifically thorough!

R. B. MORDEN, President,
Morden Machines Co.

Watertown, N.Y.

Editor: . . . another exceptionally good job. I have marked "Save" on every one of these WORLD REVIEW issues.

A. D. MERRILL, President,
Chemipulp Process Inc.

New York, N.Y.

Editor: . . . a real mine of information.

JOHN B. CALKIN, President,
Calkin & Bayley, Inc.

Los Angeles, Cal.

Editor: . . . an excellent edition and useful for future reference.

WM. J. F. FRANCIS, Vice Pres.,
American Potash & Chemical Corp.

Ardsley, N.Y.

Editor: . . . excellent information. We use this number throughout the year.

S. S. HARKAVY, Director,
Geigy Dyestuffs, Paper Dept.

New York, N.Y.

Editor: . . . an excellent job.

N. R. JOHANESON, President,
Cellulose Sales Co.

New York, N.Y.

Editor: . . . not only very interesting but also of assistance.

OLAF NIELSEN, JR., Vice Pres.,
Reinhold-Gould Inc.

New York, N.Y.

Editor: . . . excellent piece of work.

L. K. LARSON, Sales Mgr.,
Weyerhaeuser Timber Co., Pulp Div.

New York, N.Y.

Editor: . . . a wonderful job.

V. R. COUDERT, JR.
Northeastern Paper Sales, Inc.

Boston, Mass.

Editor: . . . a valuable long-time reference.

HAROLD BUGBEE, President,
Walter B. Snow & Staff Inc.

Seattle, Wash.

Editor: . . . It is not difficult to appreciate the planning and effort involved.

DAVID POLLOCK
David Pollock Agency

Clinton, Iowa

Editor: . . . an excellent job.

GEORGE E. CORSON
Clinton Corn Processing Co.

Reader in Manila

—Manila, The Philippines

Editor: I have been receiving PULP & PAPER for several years now and I enjoy reading all the fine articles and the latest trends in pulp and paper, with particular interest in the World Review number which contains a world of information on the industry everywhere.

ALEXANDER A. ADAMSON
President and General Manager,
Philippines Paper Mills, Inc.

Reader in Sweden

—Husum, Sweden

Editor: We certainly appreciate PULP & PAPER. We would never want to be without it.

E. DIEDRICHS
Husums Sulfate Mill,
Mo Och Domsjö Aktiebolag

Preferred On Every Continent. Important overseas customers give preference to Central National Corporation for their supplies of pulp, paper, paperboard and newsprint. Through its own offices and representatives in 55 leading world markets, CNC is familiar with trends and conditions everywhere and assists its customers with expert knowledge to develop their own sales.

THE GOTTESMAN ORGANIZATION

Established 1886

WOOD PULP G

Gottesman & Company, Inc. Central National Corporation
Central National Commercial Company, Inc.
100 Park Avenue, New York 17, N. Y.

Gottesman & Company Aktiebolag, Stockholm, Sweden
Central National-Gottesman Limited, London, England

PULP PAPER EXPORT CNC

Representatives in 55 Leading World Markets

PULP & PAPER Monthly Report

... of significant news and views

General Outlook ...

HOW PACKAGING CAN REDUCE COSTS, INCREASE SALES. . . . A survey by the Folding Paper Box Assn. reveals top execs of 203 retail food and grocery firms believe packaging improvements can save costs up to $45,000, increase sales as much as $75,000, for extra net profits of $2,300 for the average million-dollar supermarket each year (see page 39).

PREDICTS $5 BILLION ADVERTISING BUSINESS FOR NEWSPAPERS BY 1965. . . . Gilbert P. Swanson, president of Newspaper Advertising Executives Assn., foresees record circulation and advertising for newspapers this year, and 50% increase by 1965. "For the first eight months of 1957 circulation of dailies has moved up to 58,600,000 daily and advertising revenue has again climbed to a new all-time high." And that means continuing rise in newsprint consumption.

SEES BIG DEMAND FOR NEW CONSTRUCTION. . . . The Flintkote Co. is "preparing vigorously for the dynamic demand that will result from sharply accelerating family formations in the '60s," Perce C. Rowe, president, said recently at formal opening of Flintkote's new gypsum products plant in Sweetwater, Tex. Later Flintkote will open a new building materials plant at Ennis, Tex.

LOOK FOR INCREASED DEMAND FOR PRINTING PAPER. . . . A. G. Sharp, v.p. of Kimberly-Clark Corp., says the "long range future is bright and demand will increase strongly in the decade 1960-1970." Two reasons are increasing population and continuous demand for higher standard of living. "We're calling the next two-three years a levelling out period, but we look for a boom in the '60's," he said.

FIRST HALF NET DOWN 11.6%, according to APPA's survey of 73 companies, even though sales were up 8%, compared with first half of 1956.

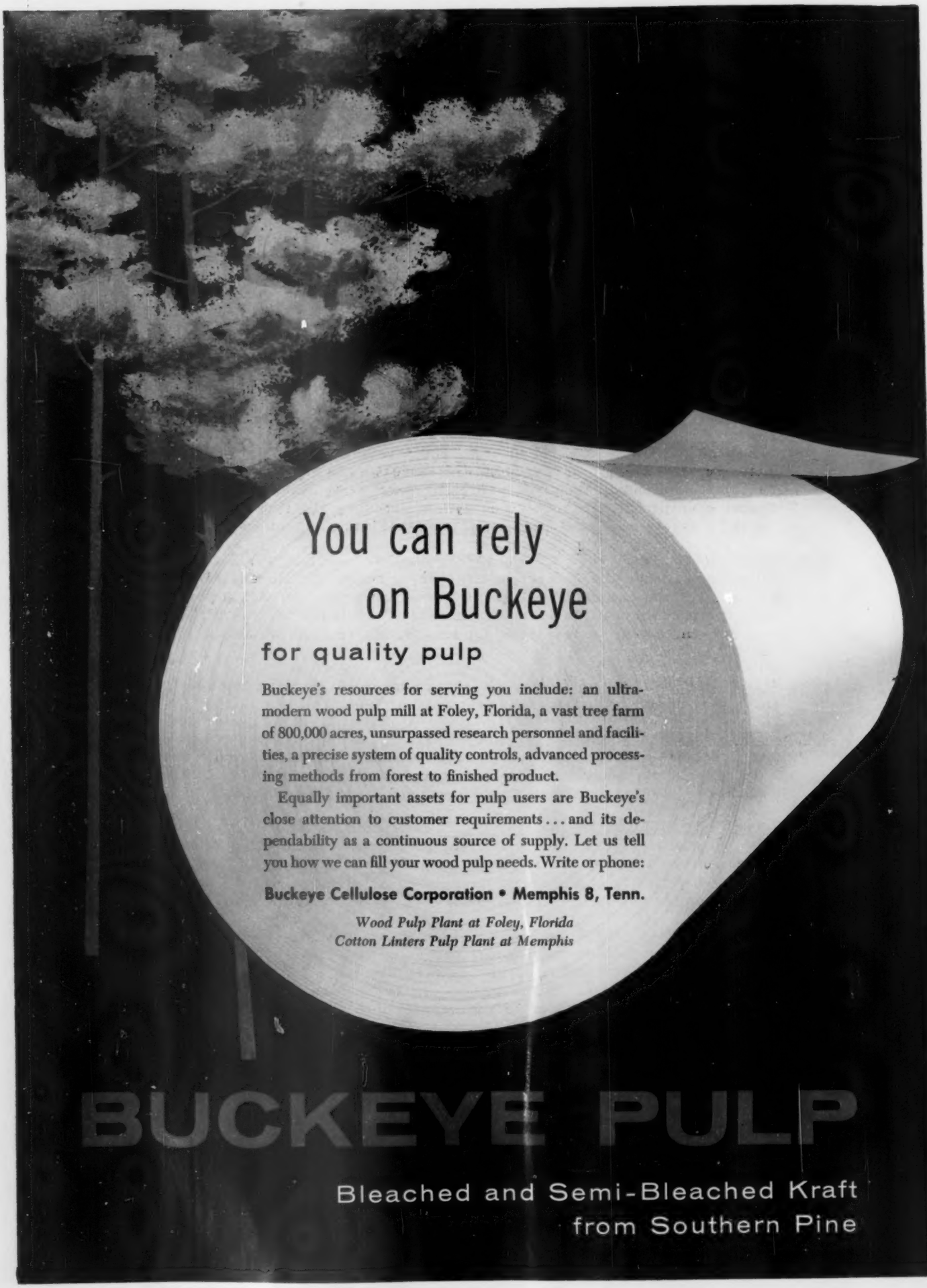
SOME NEWSPRINT MILLS RUN AT CAPACITY. . . . While recent daily paper report said some newsprint mills were cutting back production to about 5% under capacity, and one went to a 5-day week, at least three mills were reported at or near capacity — Bowater Southern, Coosa River and Great Lakes Paper.

EXPECTS ABOUT $40 MILLION EARNINGS IN '57, if remainder of the year continues at July and August levels. A. B. Layton, pres., Crown Zellerbach Corp., said "sales for the last two months ran 10 1/2% ahead of average for first half of the year and August sales established an all-time record. The realistic outlook for the paper industry — and CZ — is very favorable."

PRESENT IMPROVEMENT IN MARKET CONDITIONS signals beginning of long-awaited upturn in the industry, producers of paper packaging materials hope. If firming in market "tone" continues, companies will start off 1958 much more auspiciously than this year. Basic causes are increasing trend toward self service, with its emphasis on packaging, and development of new uses.

EXPECTS TO CONTINUE OPERATING TO CAPACITY. . . . Sir Eric Bowater says mills of the Bowater organization operated substantially to capacity during the first six months of 1957, except for Newfoundland mills where operation was curtailed by fire damage. Those mills are now operating close to normal capacity. Both sales and earnings were up in first six months of 1957 to $146,986,000 and $7,367,000 respectively, compared to $125,241,000 and $7,158,000 for same period in '56. . . .

Please turn page for more


You can rely
on Buckeye
for quality pulp
Buckeye's resources for serving you include: an ultra-modern wood pulp mill at Foley, Florida, a vast tree farm of 800,000 acres, unsurpassed research personnel and facilities, a precise system of quality controls, advanced processing methods from forest to finished product.
Equally important assets for pulp users are Buckeye's close attention to customer requirements... and its dependability as a continuous source of supply. Let us tell you how we can fill your wood pulp needs. Write or phone:
Buckeye Cellulose Corporation • Memphis 8, Tenn.
Wood Pulp Plant at Foley, Florida
Cotton Linters Pulp Plant at Memphis
BUCKEYE PULP
Bleached and Semi-Bleached Kraft
from Southern Pine

PULP & PAPER # Monthly Report

. . . of significant news and views

Mills and Mill Plans . . .

NEW CONTINUOUS CHEMICAL-MECHANICAL PULP MILL, using a recently developed process, will be built at Blandin Paper Co., Grand Rapids, Wis. Main unit will be a Bauer Bros. Model M & D continuous digester (see page 64). . . .

MARKET SURVEY AND COST ANALYSIS FOR TIMMINS, ONT. MILL is under the wing of Don Alexander, chemist who left the staff of Roy W. Emery Ltd., consulting engineers of Toronto, Ont., to undertake the job for Porcupine Forest Industries Ltd. The bleached pulp operation will use hardwood and coniferous species, and both the neutral sulfite and bisulfite processes. It is reported that no attempt at financing will be made until results of the survey are known.

MACHINES ORDERED FOR BOISE CASCADE MILLS. . . . A Fourdrinier machine with minimum capacity of 150 tons of kraft bag and wrapping paper and linerboard, and a kraft recovery boiler have been ordered for Columbia Kraft Corp. mill, to be built at Attalia, Wash., by Boise Cascade Corp. A 250-ft. long corrugating machine has been ordered for the affiliated subsidiary, Columbia Container Corp. (see page 65).

UNION BAG-CAMP TO GET 24 NEW JORDANS. . . . As part of its big expansion program for the Savannah, Ga., mill, aimed at increasing output by some 400 tons, Union Bag-Camp has ordered 24 Black Clawson No. 5 jordans to augment existing refining equipment for No. 7 machine, expected to be producing by late 1959. . . .

BROWN & ROOT TO HANDLE SOUTHLAND EXPANSION. . . . Brown & Root, Inc., Houston engineering firm, has received contract for construction of building and equipment for Southland Paper's No. 4 machine. Work on the project, which includes a 270-in. Pusey & Jones machine, will begin next August.

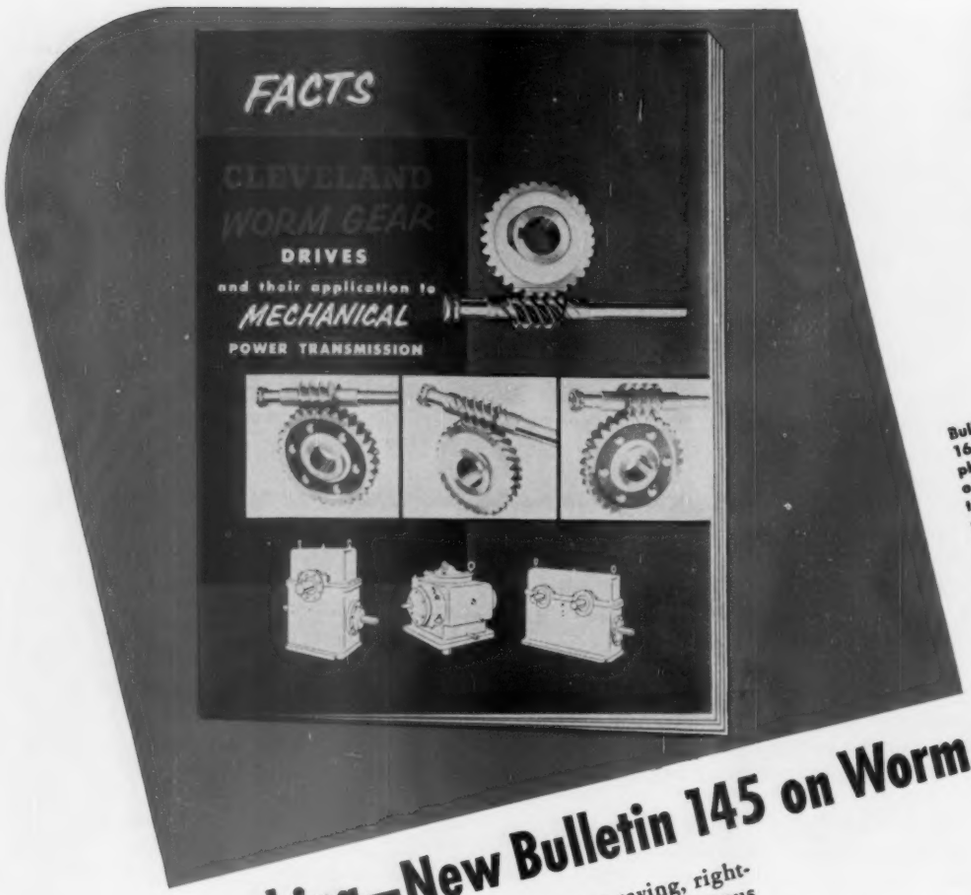
IP MAPS CONTAINER PLANT IN FLORIDA. . . . International Paper's container div. will build a corrugated container plant at Auburndale, Fla. Plant is expected to be operating early next year.

NEW WAREHOUSE AND CORRUGATED BOX PLANT TO BE BUILT for Gaylord Container Corp., div. of Crown Zellerbach Corp., in Dallas, Tex., says Lloyd Merwin, gen. mgr. for converted products of Gaylord and v.p. of CZC. The steel and masonry building will be about 180,000 sq. ft. in area. Wynn Williams continues as manager.

WEST VIRGINIA P&P GOES INTO GROCERY BAG BUSINESS. . . . West Virginia Pulp and Paper Co. will build a new plant to produce grocery bags using a new type paper developed by the company. The plant will be erected adjacent to the Charleston, S.C., mill, which is putting finishing touches on a new $20 million kraft paper machine. It is expected to be producing grocery bags by the first of next year. George Webber, formerly the company's senior market analyst at Charleston, will manage the new operation. . . .

ANOTHER MILL FOR LOUISIANA? . . . Louisiana's growing paper empire may be bolstered by still another mill. Proposed location is near Zwolle, La., in northwestern part of state. Company, incorporated as Noralyn Paper Mills, Inc., has an authorized capital of $1,383,000. It is reported that a new process developed by one of the company's officers, John W. Natwick, will be used in the mill. Leo L. Stack of Dallas, Tex., is listed as president of the new firm.

Please turn page for more



Bulletin 145 gives you 16 fact-filled pages of photographs and data on standard and custom-designed worm gear speed reducers and worm gearing components for built-in drives.

Yours for asking—New Bulletin 145 on Worm Gearing

WHENEVER you want a safe, space-saving, right-angle drive, you specify Cleveland. This famous worm-gear drive transmits power uniformly, smoothly, dependably, under even the most severe operating conditions, for a lifetime of trouble-free service. Clevelands actually improve with use. Thousands of units outlast their driven machines.

To know what Cleveland best meets any need—for speed reducer or worm-gear set—standard or special—write for new Bulletin 145. Just off press, it will bring your file up to date on this ever more popular drive. The Cleveland Worm & Gear Company, 3268 E. 80th St., Cleveland 4, O.

Affiliate: The Farval Corporation, Centralized Systems of Lubrication. In Canada: Peacock Brothers, Limited.

PULP & PAPER Monthly Report

... of significant news and views

SMOOTH STARTUP OF NO. 4 MACHINE AT HODGE, LA. MILL of Robert Gair div., Continental Can Co., was reported by Charles McCarthy, now in charge of all manufacturing for Gair mills (see page 65). . . .

WEYERHAEUSER MAY BUILD PLANT IN TEXAS. . . . Kieckhefer-Eddy div. Wayerhaeuser Timber Co. is scouting locations for a $3 million corrugated container plant near Houston, Tex.

FLINTKOTE MAPS EXPANSION IN MISSISSIPPI. . . . Flintkote Co. plans to expand its wood pulp and products plant at Meridian, Miss.

BLEACHING MAY BE NEXT AT BRUNSWICK. . . . Engineers have completed plans for projected $3,145,000 improvements at Brunswick Pulp & Paper, including bleaching facilities. All that remains is okay by directors of two owning companies, Scott and Mead.

CONTINUOUS DIGESTER FOR FLORIDA MILL. . . . A $2,000,000 contract for modernizing the Jacksonville mill of Owens-Illinois Glass Co. has been awarded to Merritt-Chapman & Scott. An "experimental" continuous digester will be installed, says C. G. McLaren, of Toledo, O., vice president and general mills and woodlands manager. The program includes modernization and extension of the Fourdrinier paper machine. . . .

EXPECT STARTUP OF ALASKA MILL ABOUT JANUARY, 1960. . . . Site clearing is under way and construction start scheduled for next spring, according to Mill Mgr. Thomas R. Stein, Alaska Lumber & Pulp Co. Ltd., Sitka, Alaska. The $55 million MgO sulfite mill is expected to employ 800 people and produce 120,000 tons of pulp yearly for shipment to Japan. The company has loaned the city of Sitka $2 million to construct initial section of dam and power plant.

INTENDS TO CONTINUE EXPANSION at Columbia Cellulose Co.'s mill near Prince Rupert, B.C., and proposed installation of a seventh $750,000 digester is indication of this says Harold Blancke, chairman of Canadian Chemical & Cellulose Co. Ltd., parent company.

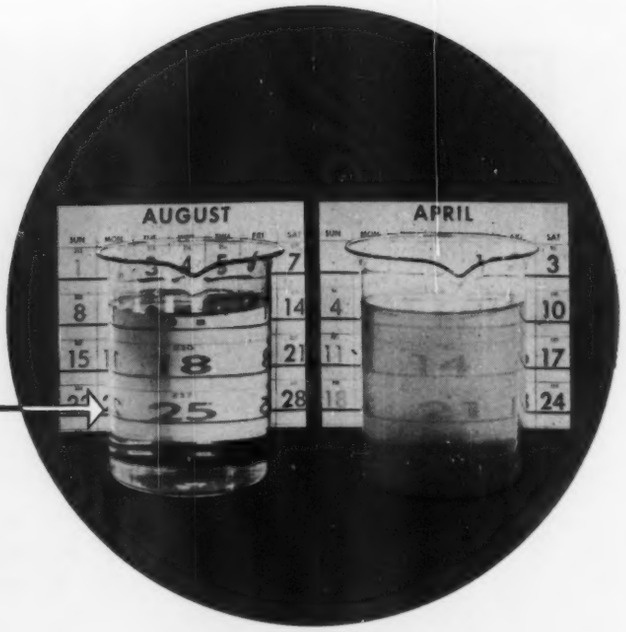
"SEMINOLE CHIEF" STARTS UP. . . . New kraft board machine commenced operations at St. Regis Paper Co., Jacksonville, Fla. Built by Beloit Iron Works, the Fourdrinier machine has a rated capacity of 1,000 tons a day. Expansion includes a new pulp mill with eight digesters and enlarged power and wood handling facilities. . . .

NO. 8 MACHINE, BLEACH PLANT TO START UP IN DECEMBER at Charmin Paper Products Co.'s Sheboygan, Mich. div., producing industrial toweling. Production on No. 9 machine, scheduled for Feb., will be in grades of industrial tissue and napkin stock. Idle for nearly three years, the plant was purchased by Charmin in June, 1956, completely renovated and a modern pulpwood storage yard installed.

POSTPONES CONSTRUCTION OF PULP MILL. . . . Allied Paper Corp. has postponed plans to build a semi-chemical pulp mill at Kalamazoo, Mich. A. H. Maremont, chairman, says capital intended for the new mill has been spent in acquiring other paper mills and converting plants.

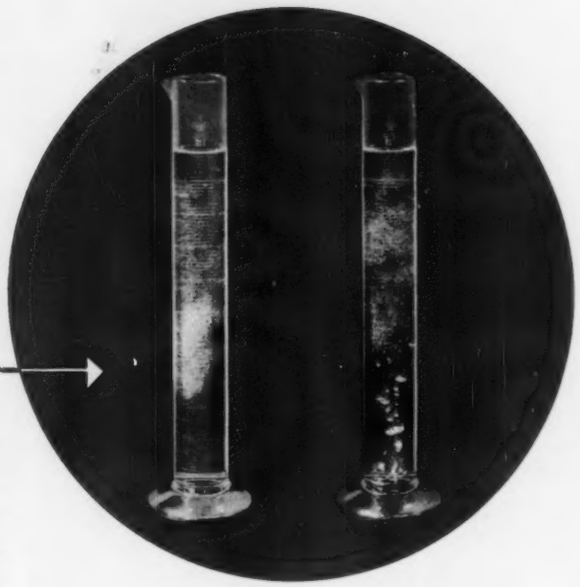
Please turn page for more

Clear Colorless Solutions *Faster!*



because

Disperses and Dissolves *So Quickly*



If you use soda ash in solution, you can probably speed up your processes by switching to Westvaco® Soda Ash.

While you watch, the free-flowing, needle-like crystals of Westvaco Soda Ash disperse and dissolve . . . form a clear, colorless solution . . . 94% as clear as distilled water by electrophotometer measurement. You never need break up lumps or clods, never need remove turbidity by filtration.

Add chemical purity, less dusting and better flowability to quick dispersion and dissolution and you have five good reasons for using Westvaco Soda Ash.

We can probably give you a bigger value for your money on your Soda Ash needs. Why not talk it over with us?

fmc® chemicals

Westvaco Chlor-Alkali Division
FOOD MACHINERY AND CHEMICAL CORPORATION

161 E. 42nd St., New York 17 • Chicago St. Louis Denver Philadelphia So. Charleston, W. Va.

BECCO peroxygen chemicals • FAIRFIELD pesticide compounds • FMC organic chemicals • NIAGARA insecticides, fungicides and industrial sulphur • OHIO-APEX plasticizers and resins • WESTVACO alkalis, solvents, phosphates, barium and magnesium chemicals

Other News ...

MARATHON, AMERICAN CAN CO. CONSIDER MERGER. . . . John Stevens, president and chairman of Marathon Corp., reports merger talks have taken place between Canco and Marathon. A Canco official says his firm is talking to a dozen companies, including Marathon, about a possible merger, but nothing is final yet. Acquisition of a paper mill would help supply needs of Dixie Cup Co., which Canco acquired earlier this year.

CHLORINE AND CAUSTIC SODA PRODUCTION STARTED in Hooker Electrochemical Co.'s Vancouver, B.C. plant in early October. Major outlet will be to pulp mills of B.C. Jack Sutherland is sales mgr., Bob Noble, works mgr.

ASSIGN COATING METHOD PATENT TO K-C. . . . Kimberly-Clark Corp. has been assigned a patent covering application of single-sided adhesive coating to sheet materials by James W. McIntyre of Neenah, Wis., and John F. Hechtman, Munising, Mich. They discovered that application of an initial coat of colloidal silica to non-porous sheets such as glassine or cellophane provides cohesive property so that rubber adhesive sticks even when re-used.

NEW PAPER SCHOOL OPENS. . . . Thirteen students were assured for the first year of the papermaking technology courses being introduced at Miami University, Oxford, O., this fall. It was possible more would be signed up during freshman registration. Six of the 13 were aided by scholarship awards from Ohio paper companies.

BOARD MILL BACK IN OPERATION 31 days after fire caused $2 to $4 million damage at Gardner Board and Carton Co.'s Lockland mill, near Cincinnati, O. About 150 jobs were directly affected but good planning enabled all these people to work at least 40 hrs. each week while production was halted.

WILL ISSUE $60 MILLION CONVERTIBLE DEBENTURES to provide added working capital for Olin Mathieson Chemical Corp. This is first time Olin Mathieson has floated a debt issue publicly. Offering would be sold through underwriters headed by Dillon, Reed & Co., Inc., and Eastman Dillon, Union Securities & Co.

MATERIALS CONSUMED BY PULP MILLS were 399,650 tons crude sulfur, 355,233 tons chlorine, 232,714 tons caustic soda (sodium hydroxide), 240,207 tons soda ash (sodium carbonate) and 716,761 tons salt cake (sodium sulfate) in 1954, according to Census of Manufacture issued by U.S. Dept. of Commerce.

PATENT ISSUED FOR TREATMENT OF SPENT SULFITE LIQUOR. . . . A group project with 26 paper companies participating resulted in a patent covering a commercially feasible method of regenerating spent liquor of NSSC pulping process and recovering the cooking agent, with no formation of objectionable compounds. Dr. Roy P. Whitney, dean of the Institute of Paper Chemistry, Appleton, Wis., Shu-Tang Han and James L. Davis were issued the patent. Two mills, one in Virginia and the other in Owens-Illinois Glass Co. paper div. at Tomahawk, Wis., are using the process.

SPENDING FOR FOREST RESEARCH ROSE 1,600%, from $2,600,000 in 1926 to $45,400,000 in 1953, and is still shooting up, A. C. Foley, chairman, Illinois Forest Industries Committee, says. Forest industries and other private sources supply more than 62% of the funds. . . .

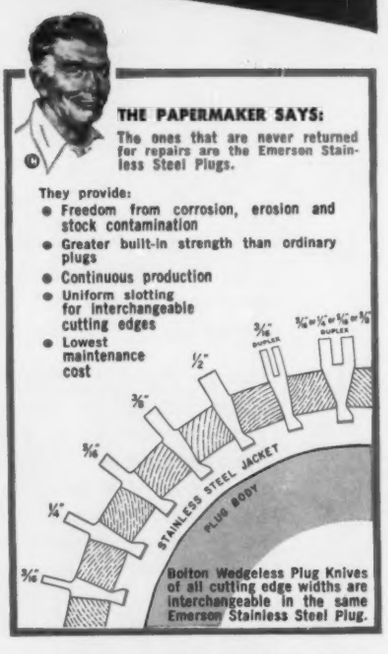
Emerson Stainless Steel Plugs guarantee lowest maintenance cost

LOWEST JORDAN PLUG MAINTENANCE COSTS ARE GUARANTEED WITH EMERSON SPECIAL FORMULA STAINLESS STEEL PLUGS. Emerson Plugs last years longer than ordinary plugs and more than pay for themselves by combating acid action and all other types of corrosion encountered in stock refining. Their special formula stainless steel gives greater built-in strength to withstand wear. Freedom from plug erosion and corrosion also means that the danger of stock contamination is eliminated.

Emerson, pioneer of bandless type plug construction, provides further maintenance economy by the special plug design. Dovetailed slots and wood separators support knives along their entire length. Separators absorb impact — prohibit destructive shock to plug body and shaft.

PROTECTS ANY JORDAN PLUG. You can also protect your present plugs against corrosion and wear with Emerson Stainless Steel. Regardless of plug condition, make, size or type, a heavy duty stainless steel jacket can be applied to your present plug by the patented Emerson process.

After machining and pre-conditioning steps are completed on your used plug, it is jacketed, machined to close tolerance, and slotted for interchangeable Bolton Wedgeless Plug Knives. New shaft sleeves and stainless steel rings are mounted on both ends with an end plate on the large end for over-all corrosion protection and strength. The plug then undergoes testing for air tightness and is dynamically balanced for the operating speed of your Jordan. The shaft is indicated for straightness. *For further information send for Bulletin No. P-7555. John W. Bolton & Sons Inc. and The Emerson Manufacturing Co. Division, Lawrence, Massachusetts.*


THE PAPERMAKER SAYS:
The ones that are never returned for repairs are the Emerson Stainless Steel Plugs.
They provide:
• Freedom from corrosion, erosion and stock contamination
• Greater built-in strength than ordinary plugs
• Continuous production
• Uniform slotting for interchangeable cutting edges
• Lowest maintenance cost
3/16" DUPLEX
1/2"
3/8"
5/16"
1/4"
3/16"
STAINLESS STEEL JACKET
PLUG BODY
Bolton Wedgeless Plug Knives of all cutting edge widths are interchangeable in the same Emerson Stainless Steel Plug.

BOLTON EMERSON

TRADE MARK

Filling the Needs of Papermakers: JORDANS • CLAFLINS • FILLINGS • PLUGS • STAINLESS PLUG JACKETS • BEATER BARS AND BED PLATES • SHOWER PIPES • SUCTION BOX COVERS • MAGNETIC EQUIPMENT • MACHINE KNIVES.

IN CANADA: Pulp and Paper Mill Accessories, Ltd. Montreal, P. Q.

IN MEXICO: Manuel Del Castillo 1. La Catolica 45 Desp. 711-712 Mexico (1) D.F.

European TAPPI Plans 1958 Meeting in Italy

Graz, Austria. . . . The Study Group of European TAPPI, meeting in Graz recently, decided to meet next year in Italy. Professor Karl Adamik, of the Austrian Pulp and Paper Institute here, succeeds Dr. H. F. Rance of England as president of the group. National representatives are: Austria, Mr. Adamik; Belgium, P. Ceuterick; Finland, O. Ant-Wuorinen; France, J. Laroche; Germany, K. Schonemann; Great Britain, H. Rance; Hungary, G. Vamos; The Netherlands, F. Muller; Sweden, G. von Essen; Switzerland, R. Naville. The executive committee planning next year's conference will probably include, besides Mr. Adamik: Vice Presidents J. Laroche and H. Rance; Secy. and Treas. I. Hendry; and one Italian representative.

Eastern Bloc Conference on Paper

Moscow . . . Experts from the Soviet Union, Bulgaria, Hungary, East Germany, Poland, Rumania and Czechoslovakia met here recently for a paper production conference. An East German delegate revealed that the cellulose and paper works at Heidenau are making great efforts to use newer processes in production of cellophane. A Rumanian delegate said work on converting reed into cellulose was proceeding rapidly. Equipment and technical advice were supplied by East Germany, Poland and Czechoslovakia. A Soviet delegate anounced that his government aims at raising paper output by 56% and cardboard output by 12%. Hungarian delegates said good quality paper can be produced from straw cellulose by adding a proportion of other fibrous semi-fabricates.

International Corp. Formed

New York, N.Y. . . . Henry A. Arnold is president of the newly-formed Olin Mathieson International Corp., a wholly owned subsidiary of Olin Mathieson Chemical Corp. He will supervise overseas production and marketing of all OM products including cellophane and paper packaging.

New Pandia Starts Up

Tokyo . . . High yield kraft is expected to be flowing any day now from a new Pandia continuous digester at the Takasaki Paper Mfg. Co. at Nikko, Japan. Using Japanese red pine, beech and birch, the Pandia unit is designed for 132 short tons per day and consists of a 15-in. screw feeder, a four-tube continuous digester with 42-in. dia. tubes, and a 28-in. discharger. All operations, from wood chips to refined and screened pulp will be under automatic controls from a central panel. End product will be a high grade linerboard.

Takasaki operates seven Fourdriniers at three mills and six Yankees with total output of 94,000,000 lbs. of paper and board; 30 million lbs. of pulp.

Using Bi-Sulfite Processes

Toronto, Ont. . . . It is reported that Abitibi Power & Paper Co., Ltd., is now using a single-stage form of bi-sulfite in at least two of its mills, using soda and/or combined soda and magnesia base. At least four European mills are using bi-sulfite processes in regular production, and a number of others are planning to do so starting in 1958. These include the Swedish firms, Stora Kopparberg and Holmens Bruks, the Finnish firm Rauma-Reppola, and one Norwegian company.

A-C International Appoints Staff

Milwaukee, Wis. . . . Allis-Chalmers International, recently organized to handle manufacturing, engineering and sales operations outside the U.S. and Canada, announces the following appointments covering its engineering products: Warren J. Holmes, mgr. of sales; J. C. Warner, territorial sales mgr., Middle and East Asia, Oceania; D. W. Arendt, territorial sales mgr., Africa, Europe, Near East; Ladis Pinilla, regional sales supervisor, South America; George D. Sheriffs, regional sales supervisor, Mexico, Central America, Caribbean area.

Seeks Capital for Pakistan Mill

Dacca, East Pakistan . . . M. M. Ispahani, Ltd., is seeking United States collaboration in establishing manufacturing industries in that country, according to U. S. Dept. of Commerce. Domestic demand warrants setting up cellophane paper and stationery industries, it is reported. Ispahani is one of the largest business and industrial groups in Pakistan.

West Germany to Hold Fair

Dusseldorf . . . The 3rd DRUPA (International Print and Paper Fair) will be held here May 3 to 16, 1958. Machinery for papermaking, finishing and converting will be displayed. Australia, Belgium, Denmark, Finland, France, Great Britain, Italy, Netherlands, Norway, Austria, Sweden, Switzerland and U.S.A. will participate.

Open Middle East Office

Beirut, Lebanon . . . Spicers Ltd., paper firm of London, England, has opened an office in Beirut to supply Lebanon, Kuwait, Iran and Iraq. The company plans to set up subsidiary order offices in Kuwait, Baghdad and Teheran. Demand for paper in the Middle East is increasing rapidly as a result of free education schemes financed by state oil revenues.

Scraping Rattan at Zamboanga

Used for wicker-work, walking sticks, etc. Could fiber be used for paper? Philippine workers use primitive implements to scrape rattan at Zamboanga, one of the country's main ports, on island of Mindanao.

WOOD PULP
PAPER

Offices and representatives
in 60 cities in the United States, Europe,
Latin America, Africa, and Asia

BULKLEY DUNTON
ORGANIZATION
295 MADISON AVENUE, NEW YORK 17, N. Y.

BULKLEY DUNTON & CO., INC. • BULKLEY DUNTON PULP CO., INC. • BULKLEY DUNTON S.A.
BULKLEY DUNTON, LTD.—LONDON • BULKLEY DUNTON, A.G., ZURICH • BULKLEY DUNTON A/B
BULKLEY DUNTON PAPER (FAR EAST) CO., INC. • HEMISPHERE PAPER CO., S.A. • BULKLEY DUNTON PROCESSES, INC.
In New England—CARTER RICE STORRS & BEMENT

WORLD PULP & PAPER Technical News

Selection of Technical Papers from Abroad

PULP & PAPER presents these selections with permission of The Institute of Paper Chemistry and with assistance of Curtis L. Brown, editor of the Bulletin of the Institute. Photostats and/or translations of any of the original reports may be obtained by writing to Eugene Bunker, Librarian, The Institute of Paper Chemistry, P.O. Box 498 Appleton, Wisconsin.

Discusses ALB-Semicell Process . . .

ANON. Fundamental observations on the development and characteristics of the ALB-Semicell process. Das Papier 11, no. 13/14: 311-12 (July, 1957). [In German] Bull. Inst. Paper Chem. 28: 84.

Some logical reasoning underlying the invention and development of the ALB-Semicell process is presented. The process is based on the pre-impregnation of spruce- and hardwood chips or bolts with alkaline monosulfite liquor to sulfidize and thermoplasticize the lignin without dissolving it, followed by mechanical defibration to obtain a light-colored pulp with a high proportion of long fibers. The latter imparts to Semicell papers a tearing strength 10-15% higher than that of papers made from a comparable chemically pulped furnish. Bleaching losses are only 3% at the most, giving an 80% bleached pulp yield. Production costs are claimed to be only 60% of those for unbleached chemical pulp, and the spent liquor is recirculated, thus avoiding stream pollution. ALB-Semicell papers show better drainage and drying properties on the paper machine, hence economizing steam and increasing machine capacity. Their degree of interfelting is better, as judged from higher clay retentions, and their printability is excellent. Some applications include top liners for duplex and triplex boards, writing papers, and other grades which tolerate some mechanical pulp content. C.L.B.

Studies Grinding Fundamentals . . .

STEENBERG, BORJE, ECKERMANN, JAN, and JOHANSSON, BERTIL. A new approach to a study of grinding fundamentals. Norsk Skogind. 11, no. 6: 235-9 (June, 1957). [In English] Bull. Inst. Paper Chem. 28: 48.

A theoretical comparison between the conditions in the grinding zone of a pulpwood grinder and a lubricated bearing operating under boundary-lubrication conditions indicated that the water film between the stock and the log in a grinder should exert a pressure tending to separate the log from the grindstone. Such hydraulic pressures were experimentally shown to exist. They vary over the length of the grinding surface and seem to increase rapidly with increased peripheral speed of the stone and increased grinding pressure and temperature. In mill-scale operations with modern high-speed grinders, this pressure offsets a considerable portion of the applied grinding pressure. Hence, only protruding parts of the stone and the log touch each other, explaining the tearing out of the fibers from the wood during grinding. The high shear rates in the liquid film are probably responsible for the regrinding of the primary extracted fibers and fiber bundles. A technique for sampling the water-pulp film between the stone and the log at various points during actual operation has been developed to determine the temperature conditions and the progress of grinding and refining. 8 figures and 1 reference. C.L.B.

Studies Unbleached Straw Pulps . . .

CHENE, M., SANGENIS, S., and AYROUD, A. M. Correlation between the physical characteristics of unbleached straw pulps and their lignin and pentosan contents. Assoc. tech. in. papetière, Bull. no. 3: 98-110 (1957). [In French]; Bull. Inst. Paper Chem. 27: 1432.

Multiple correlations were found between the lignin and pentosan contents and various physical properties of unbleached wheat-straw pulps cooked for 2-6 hr. at 80-110 or 125-170°C. with 4-12% sodium hydroxide (based on straw weight). In general, the tensile, bursting, and tear strengths and the brightness of the pulps increased as the lignin content decreased and the pentosan content increased. On the other hand, porosity increased with increased lignin content and decreased with decreased pentosan content. 8 tables, 34 graphs, and 4 references. E.A.C.

How to Use Wax Emulsions . . .

ANON. Emulsions based on mineral wax for paper finishing. Allgem. Papier-Rundschau no. 22: 1149-51 (Nov. 20, 1956). [In German]; Bull. Inst. Paper Chem. 27: 1436.

Paper with good printing properties is produced by replacing 10-35% of the rosin size with microcrystalline wax. Suitable wax emulsions are available in Germany under the trade name "Mobilcer." The addition may be made separately or together with rosin. The amount of wax added should not exceed 1% of the dry pulp weight. In addition to water- and greaseproofness, the incorporation of petroleum wax at the beater also improves the flexibility, adhesion, wet-strength, foldability, anticurling, non-yellowing, nondusting, and other properties of the paper sheet. Moreover, it accounts for savings in rosin size and printing ink. The principal disadvantage of wax emulsions is their frost sensitivity, requiring storage above 4°C. C.L.B.

Comparison of Sulfate Pulps . . .

FLAMM, EILHARD, and BELLAK, FRITZ. Osterr. Papier-Ztg. 63, no. 6: 17, 19 (June, 1957). [In German]; Bull. Inst. Paper Chem. 27: 1388.

Since 6.7% of Austria's total forested area is larch (as compared with 9.8% pine and 56.8% spruce), comparative kraft cooking trials were made with larch- and pinewood. No significant differences between the two species were obtained either in yield (48-50.5%) or in cooking degree (Johnson-Noll number 35-37.5 and 44.7-46.5 at alkali ratios of 0.195 and 0.180, respectively) after pulping for 3.5 hr. (including heat-up time) at 175°C. The physical properties of the pulps (freeness, tear length, elongation, folding number, burst, and curl or warp) showed but little differences between the two species, although the larchwood pulp possessed a higher proportion of short and a lower proportion of long fibers (2.5-3.0 mm.). 3 tables. C.L.B.

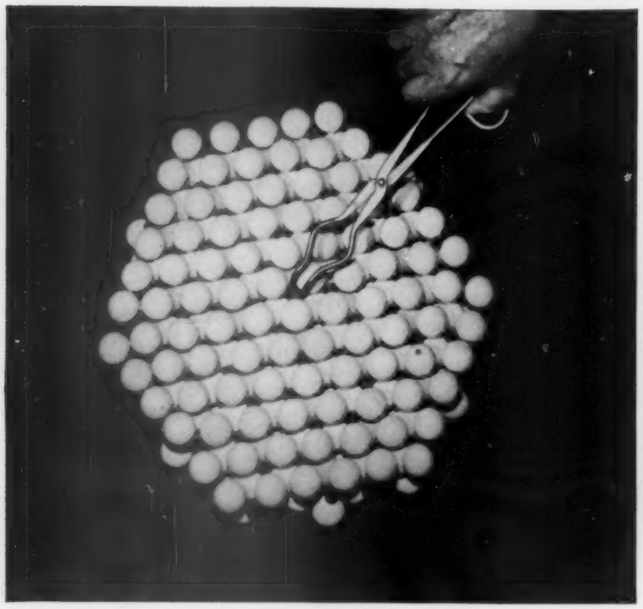
235 Machines for Packing . . .

DIE NEUE VERPACKUNG. 10, no. 4: 224-5, 227, 229-34, 236-7, 239-45 (April, 1957). [In German] Bull. Inst. Paper Chem. 27: 1131-2.

Technical data, including applications, operating range, efficiency, manufacturer, and literature references, are tabulated for 235 packaging machines, mostly of German make. The machines include filling, counting, weighing, gluing, laminating, lacquering, wrapping, tying, labeling, sealing, closing, cleaning, deep-drawing, bagging, stitching, and related machinery. 1 table. C.L.B.

PAPER CLAYS . . .

to benefit the future of your company



PROBE STARTS

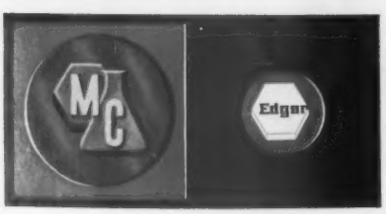
with fundamentals—the molecular structure of kaolin. To support its role of largest U.S. producer of water-washed clays, and pioneer in this development, M & C research and quality control facilities and data are second to none—cover every step from clay mines to finished papers and paperboard.

NO ROOM FOR VARIABLES

This X-ray diffraction equipment—used to determine crystalline composition of substances —helps M & C put the stamp of *unexcelled uniformity* and *consistent quality* on our paper clays . . . attributes you can use to set new standards in production, quality and printing behavior. Dr. C. G. Albert, M & C's Director of Application Research, examines X-ray test results.

"CRITICAL"..."RIGID"...

are words all papermakers use to describe their viscosity requirements. M & C's newest tool for measuring this vital property—the inclined plane viscometer—helps set new standards of controlled viscosity and uniformity. Glen Hemstock, Senior Chemist, Fundamental Research, (a) positions controlled amount of clay slurry on grid (b) releases impact cylinder (c) measures the resulting smear.



MINERALS &

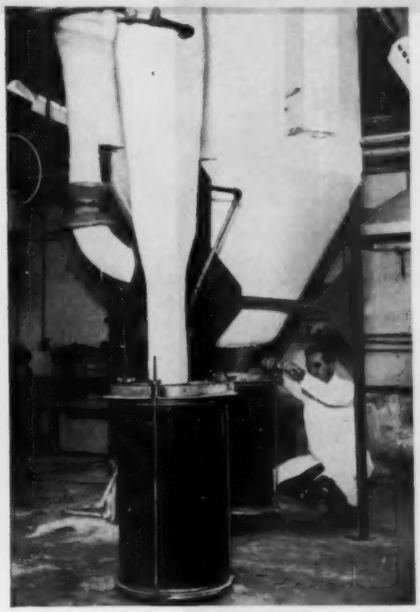
CORPORATION OF AMERICA

Leaders in creative use of

Exciting focus on scientific creativeness

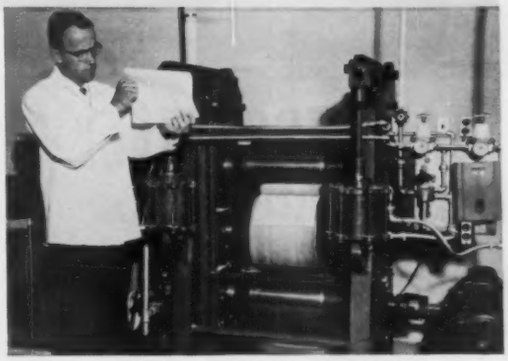
At its big, modern Research Center, Minerals & Chemicals works to create new and improved products that will yield greatest value and lowest costs to papermakers. Our job is to offer more than paper clays; we want them to be so good they become a segment of the future security of your business. Here—in the words and pictures of research—is how M & C *earns* its place as your supplier of today's (and tomorrow's) finest paper clays.

MIN CHEMISTRY *at work*



IMPROVED SHEET GLOSS, BRIGHTNESS AND INK RECEPTIVITY—

as functions of judicious clay selection and use—are uppermost in the mind of Wade Claxton, M & C's Supervisor of Paper Research. Gloss tests run on this lab-scale calender stack help pin down the right answers.

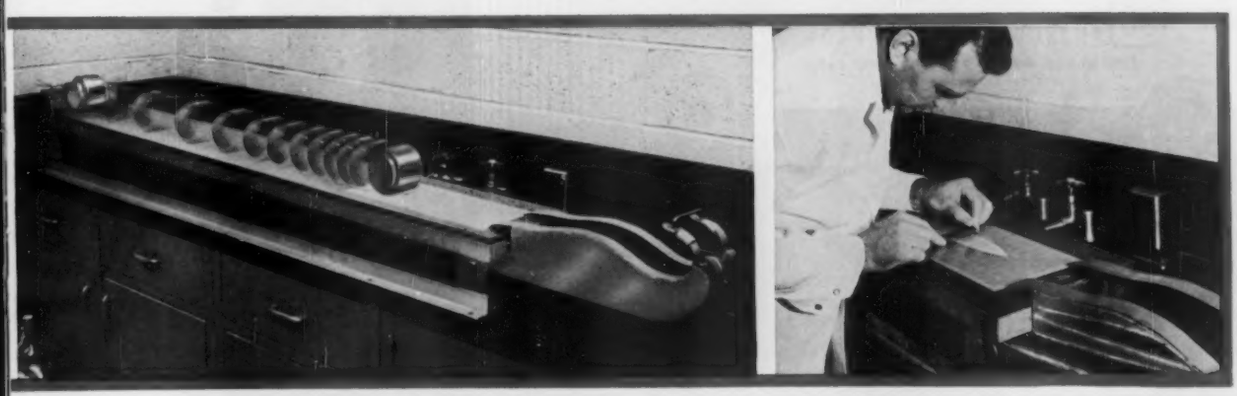


AIR-CONDITIONED CORRELATION

As the closest way to duplicate mill coating conditions, M & C uses this close-tolerance proof press in a constant temperature room. Mike Pavol, Paper Chemist, applies test coating on a customer project.

FINEST COATED PAPERS

get their start at pilot level. Using pilot-scale equipment like the Spray Dryer shown here, M & C was first in the spray drying of coating clays. Bill Davis, Pilot Plant Senior Technician, heads for even more remarkable goals under a program that never stops.



Use this coupon. Your request for prices, data, samples or personal service will be given immediate attention.

CHEMICALS

445 Essex Turnpike, Menlo Park, New Jersey

non-metallic minerals

MINERALS & CHEMICALS CORPORATION OF AMERICA
445 Essex Turnpike, Menlo Park, New Jersey

Please send me, without obligation:

- ☐ "Typical Analyses of Edgar Coating and Filler Clays"
- ☐ "Typical Data on the Handling and Storage of Edgar Paper Clays"
- ☐ First-hand information and samples pertaining to_____

name_____ position_____

firm_____

address_____

city_____ zone____ state_____

STAINLESS STEEL

CORROSION-RESISTANT HEART FOR FOSTORIA* MAGNETIC PUMPS

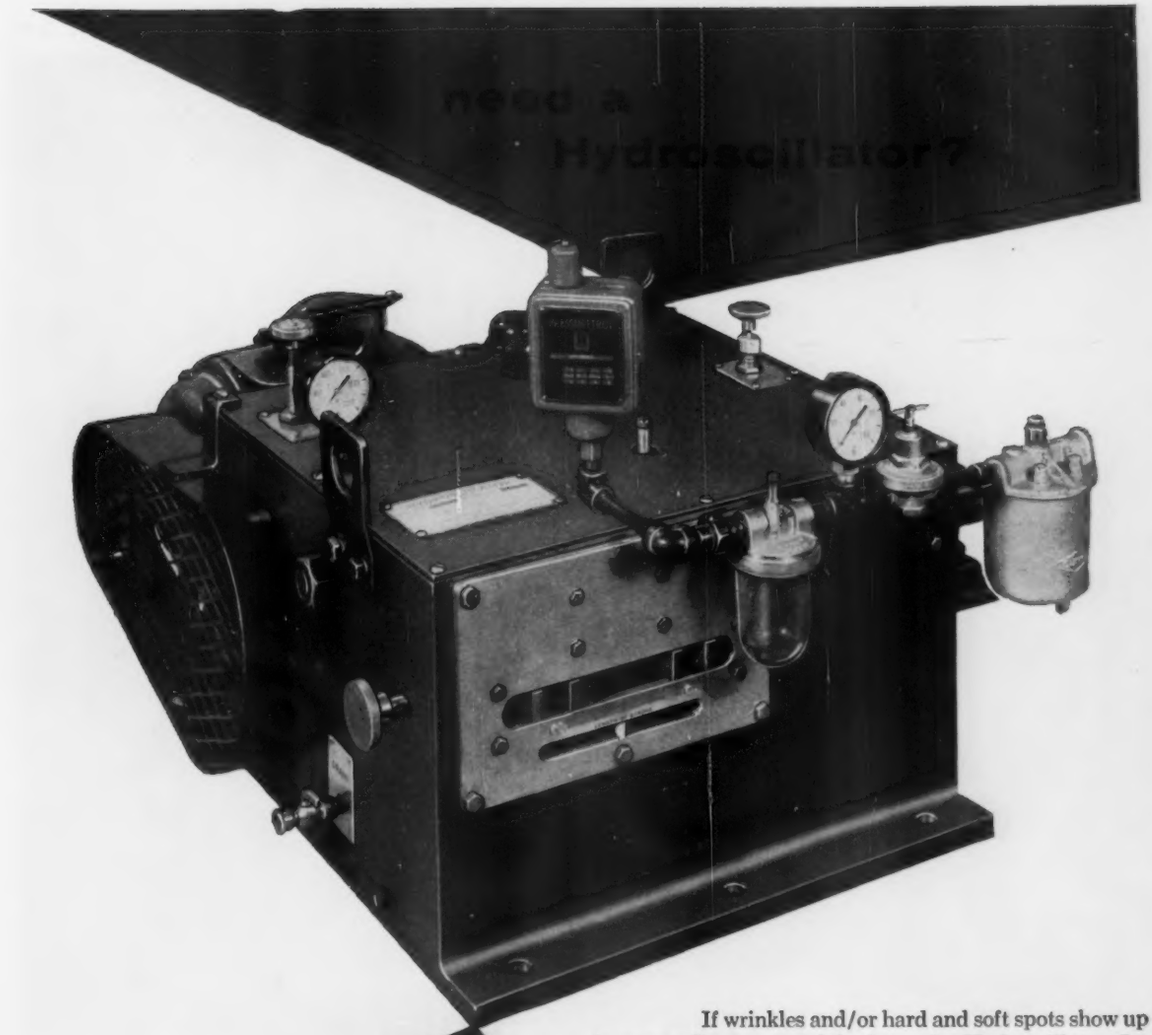
Design of Fostoria's Dynapump called for a corrosion and wear resistant hollow shaft, with drilled slots in one end. As an integral part of the pump, dimensional accuracy was critical and the O.D. had to be ground to provide a smooth bearing surface. Damascus 7/8" x 16 gauge stainless welded tubing was selected — a wise choice for handling both corrosive and non-corrosive fluids.

**The Fostoria Pressed Steel Corporation, Fostoria, Ohio, manufacturers of pumps for industrial and residential use.*

DAMASCUS TUBE COMPANY
STAINLESS STEEL TUBING AND PIPE
GREENVILLE, PENNSYLVANIA

FORMED STEEL TUBE INSTITUTE

WRITE FOR FREE CATALOG



If wrinkles and/or hard and soft spots show up in your rolls, you certainly do need a Hydroscillator. Install one on your rewinder and those troubles will vanish.

Ross Midwest Hydroscillators are hydraulically operated—can be set to deliver strokes of from ½" to 3¾" as required. Oscillating speed from 0" to 24" per minute. Thrust up to 11,000 lbs. Effective on rolls of all sizes—even the very largest. Space required—very little.

A number of mills have installed Ross Midwest Hydroscillators and speak very highly of them. Perhaps you also could use one to advantage.

Crane Stop-Checks Mean Safer Boiler Operation

This valve cost-free for quarter century

Gate, globe, angle or stop-check—Crane steel valves are hard to beat for low-cost service on steam.

This is proved again on the installation at Scott Paper Company's West Coast Division at Everett, Wash. This Crane 300-pound stop-check has been on one of its boilers since the pulp mill was built in 1929. Working pressure: 250 psi at 450 deg. F.

Not until 1954 did this Crane No. 30XU valve need any repairs—after 25 years of steady operation with just routine maintenance. Now with new parts, it's ready to set another such record.

A single moving part: the disc—with chatter-free throttling lip—and effective disc cushioning—is one of the many reasons why Crane stop-checks have racked up this kind of service record in installation after installation. Ask your Crane Representative for full details, or write to address below.

IDEAS FOR YOU in this free book of "Valve Performance Facts." Your Crane Man has a copy for you.

CRANE VALVES & FITTINGS

PIPE • PLUMBING • KITCHENS • HEATING • AIR CONDITIONING

Since 1885—Crane Co., General Offices: Chicago 5, Ill.—Branches and Wholesalers Serving All Areas

You can SEE AND FEEL the difference...

IN LOCKPORT'S NEW

Dura-Loft* Felt

OUTSTANDING COMPANION OF THE WORLD-FAMOUS TENAX FELT

And DURA-LOFT'S special qualities go far deeper than its obviously "different" texture and appearance. The research back of the development of DURA-LOFT endowed this new felt with operating qualities never before built into a papermakers' felt.

Your Lockport Felt representative has complete DURA-LOFT specifications and samples.

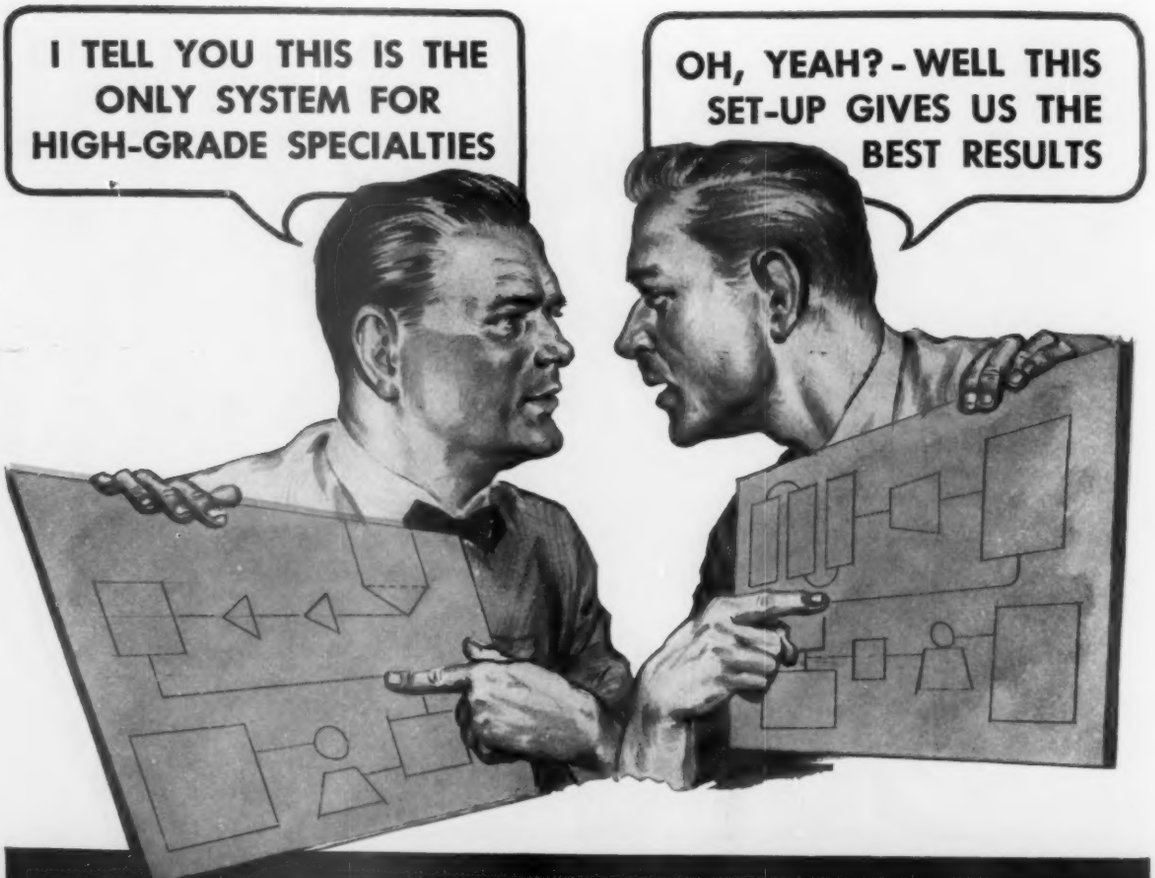
*TRADE MARK

TENAX Dura-Loft Felt LOCKPORT FELT COMPANY, Inc.

Serving the Papermakers Since 1891

NEWFANE, N. Y. STARKVILLE, MISS.

TENAX FELTS



But there's one thing they agree on...

YOU CAN DO IT BETTER WITH E.D. **Jones**

A flow-chart will get you an argument almost anywhere, any time, because different systems have their own partisans — even when the end product is the same. Maybe you wouldn't agree with either of these superintendents.

But on one point you'll find more and more agreement: whatever the system, Jones equipment belongs in it — for better performance, better sheet qualities and over-all operating efficiency and economy.

Only Jones offers a complete range of top-quality stock preparation machinery . . . pulpers, beaters, disc and conical refiners, screens. So you can always count on Jones for unbiased recommendations for any system — and top quality equipment to meet *your* requirements.

Ask your **Jones** *man first...*

E. D. JONES & SONS COMPANY

Pittsfield, Massachusetts

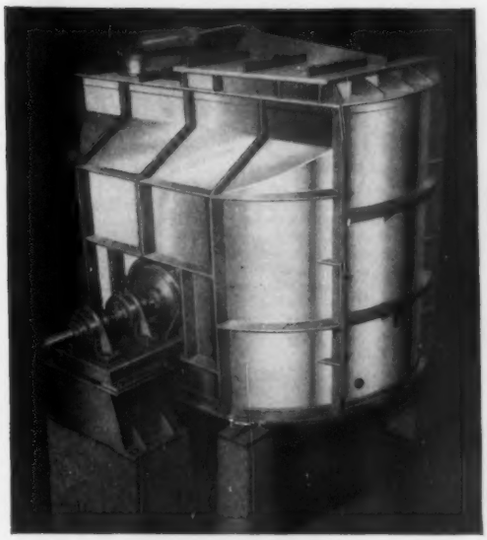
BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

In Canada:
The Alexander Fleck, Ltd.
Ottawa

Export Agents:
Castle & Overton, Inc.
New York 20, N. Y.

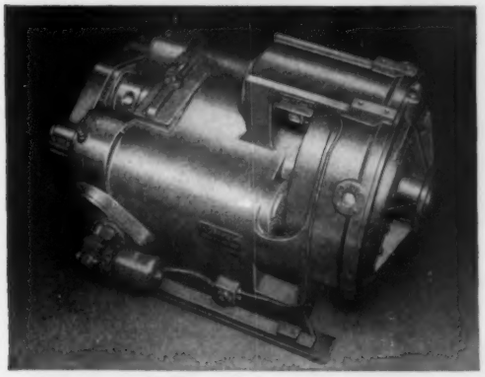
Foreign Licensees: FRANCE, Batignolles-Chatillon • SPAIN, Gabilondo

E.D. Jones HI-LO PULPER



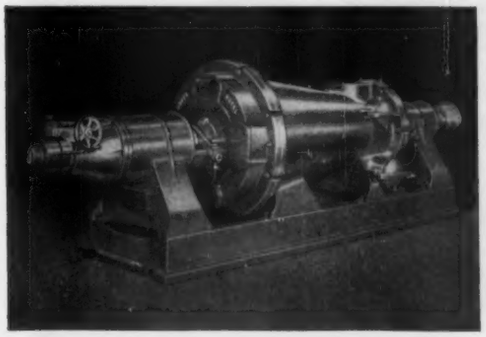
Engineered to eliminate the compromise imposed by conventional single-rotor pulpers between maximum circulation and complete defibering, the HI-LO employs two separately powered rotors to provide maximum pulping *and* complete defibering, with significant savings in time and power. For details, ask for Bulletin EDJ-1063.

E.D. Jones DOUBLE-D REFINER WITH DOUBLE EQUA-FLO EFFECT



The only unit of its kind with *two stages of refining* in one machine, the Jones Double-D can actually do twice the work of conventional refiners because it has double the refining area — 2200 square inches in the 42" model; produces stock of equal or better quality at a considerable saving in operating cost. Ask for Bulletin EDJ-1083.

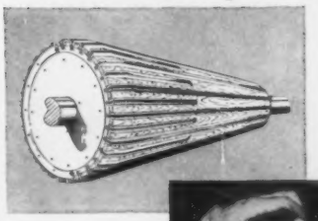
E.D. Jones ROYAL JORDAN

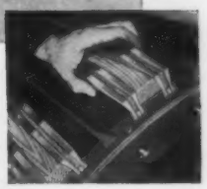


Like all Jones Jordans, the Royal incorporates exclusive Jones features developed in more than a century of service to paper mills. In addition, the Royal, a war-born unit developed originally to process nitrocellulose has some special features worth investigating. Ask your Jones representative or write for Bulletin EDJ-1007B.

TIME FOR REPLACEMENT?

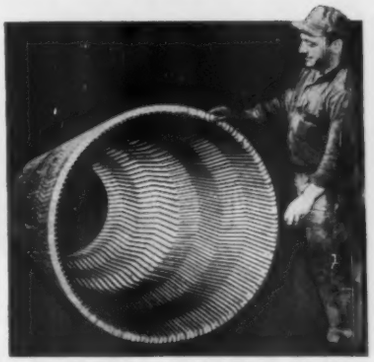
E.D. Jones® Adapta-Plug





Strongest plug design yet developed, this new completely bandless Jordan plug is easiest to strip and fill. New, improved design holds bars firmly in place, eliminates hazards of slot wear and corrosion. Available in solid plug — or sleeve form for easy conversion of old worn plugs. Write for Bulletin EDJ-1094.

E.D. Jones® FULBAR SHELL FILLINGS



A complete one-piece assembly, made to fit the shell body of any Jordan. No keys or wedges. Fulbar rigidity and one-piece construction compensate for inequalities in old Jordan shells — save hours of installation time. Many other new advantages make this the ideal shell filling. Write for Bulletin EDJ-1094 and names of satisfied users.

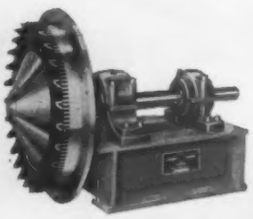
E. D. JONES & SONS COMPANY
Pittsfield, Massachusetts

Builders of Quality Stock Preparation Machinery

In Canada: The Alexander Fleck, Ltd., Ottawa

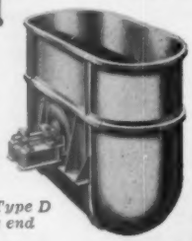
ITALY, de Bartolomeis • JAPAN, Mitsubishi

MORDEN



Model C "Slush-Maker" pulping unit

Around the world, the

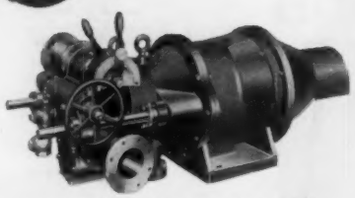


"Slush-Maker" Type D continuous dry end

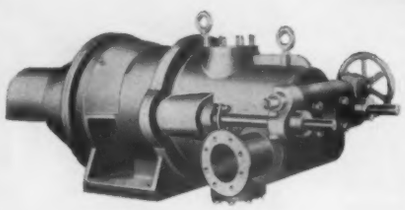
name "Morden"

"Slush-Maker" Type A batch or continuous

stands for specialists

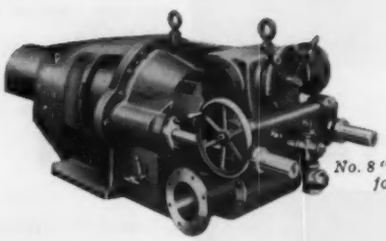


No. 6 "Stock-Maker" for beating



"Stuff-Maker" for jordaning

in quality and in service.



No. 8 "Stock-Maker" for beating

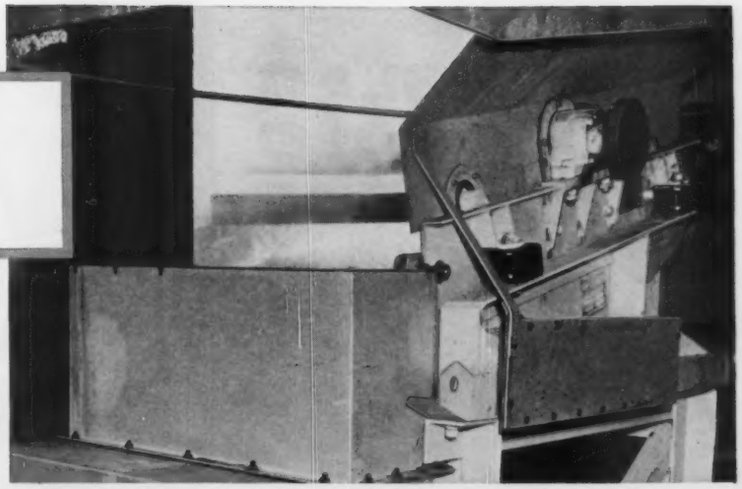
Send for your copy of the Morden Catalog, and ask for an in-the-mill discussion of your stock preparation requirements.

MORDEN MACHINES COMPANY

3420 S. W. MACADAM AVENUE, PORTLAND, OREGON

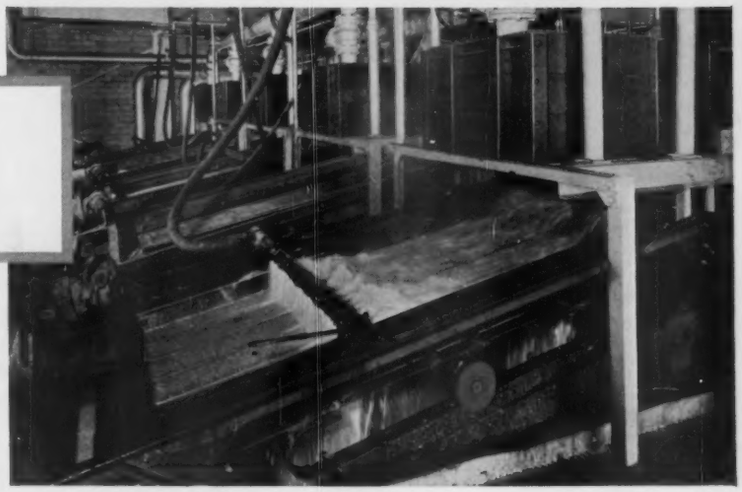
UNITED STATES REPRESENTATIVES — Midwest: Dan B. Chapman, Appleton, Wis.; Northeast: Orton Corporation, Fitchburg, Mass.; South: Brandon Sales, Greenville, S. C.

For low-cost DEWATERING



UNION BAG-CAMP PAPER CORP. uses 6 Link-Belt liquid vibrating screens to dewater unwashed and unrefined semi-chemical pulp at its Savannah (Georgia) plant. Each screen consistently processes over 50 tons a day. Dewatering of the neutral sulfite semi-chemical pulp before it is refined cuts horsepower requirements of refiners in half.

For efficient RECOVERY



RECLAIMING PULP PARTICLES from large volumes of water is a fast, economical operation with Link-Belt liquid vibrating screens. Five screens at right are recovering pulp from factory white water. Each is equipped with a power-propelled traveling spray. Both dewatered pulp and clarified water are returned to system for re-use.

LINK-BELT liquid screens prove most profitable for pulp

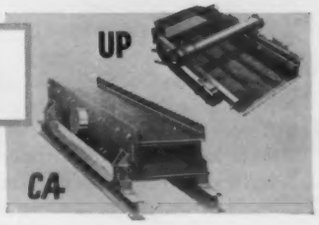
Throughout the paper industry, Link-Belt liquid vibrating screens are helping mills get "extra profits" out of pulp production. They hold dewatering costs to a minimum . . . reclaim salvageable waste quickly and economically . . . enable mills to avoid stream pollution.

Because of a special deck design, Link-Belt liquid vibrating screens can be equipped with very fine screen cloth. This feature, plus the high-frequency, small-amplitude vibration produced by a fully enclosed, self-aligning roller bearing vibrator mechanism, assures maximum solids retention . . . maximum liquid passage.

You can get expert counsel on any screening problem by calling your nearest Link-Belt office. Or write for Books 2377-A and 2554.

14.720

. . . and for thorough CHIP SCREENING



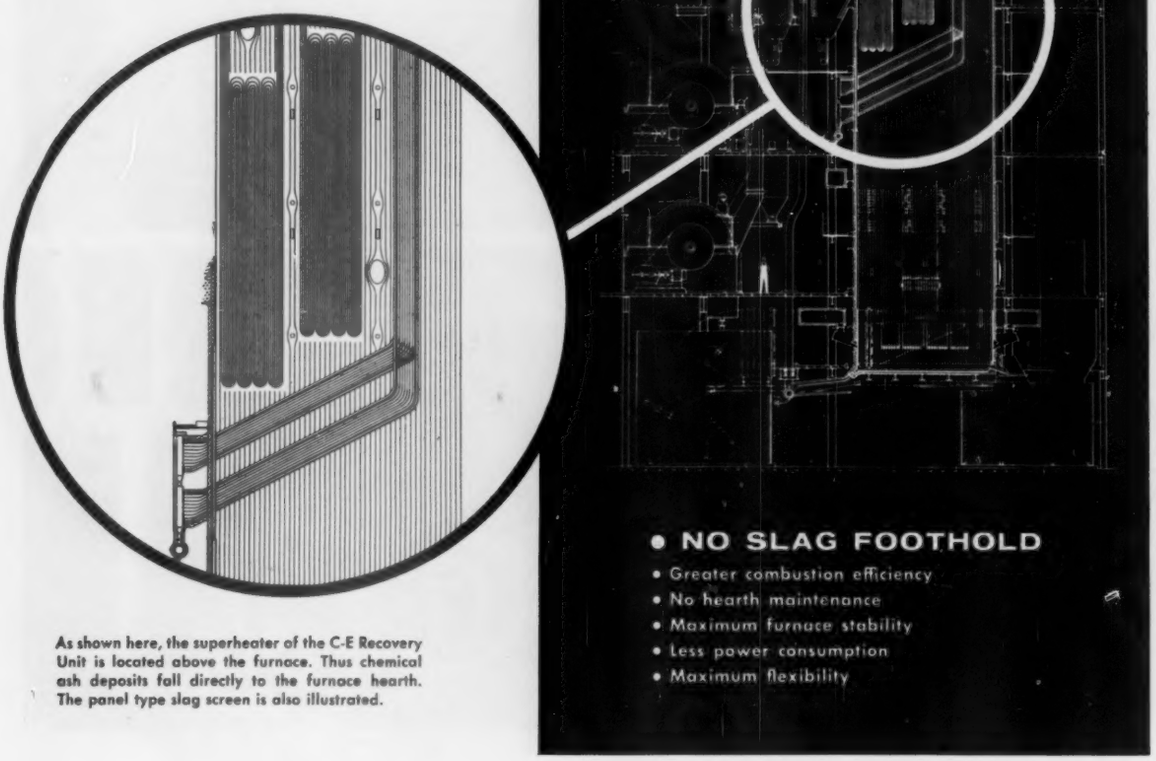
FAST BED STRATIFICATION in high-capacity screening is achieved with Link-Belt "CA" vibrating screens. "UP" screens assure equal efficiency on low-capacity jobs.

LINK-BELT

VIBRATING SCREENS

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants and Sales Offices in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville (Sydney), N.S.W.; South Africa, Springs. Representatives Throughout the World.

NO SLAG FOOTHOLD HERE



As shown here, the superheater of the C-E Recovery Unit is located above the furnace. Thus chemical ash deposits fall directly to the furnace hearth. The panel type slag screen is also illustrated.

Slag accumulation on the superheater tubes of a chemical recovery unit means trouble. With a conventional type superheater, slag builds up and anchors itself around individual tubes, reduces heat transfer rates, blocks gas passage, increases draft loss and necessitates frequent mechanical and manual cleaning.

The self-cleaning panel type superheater, found only on the C-E Recovery Unit, allows slag no such foothold. Each element—or panel—of the superheater consists of a solid wall of tangent tubes with wide spacing between panels. The space between individual tubes has been eliminated. There are no spacers. Slag deposits are confined to the wall-like surface of the elements where a considerable amount of it frees itself and the rest is easily dislodged.

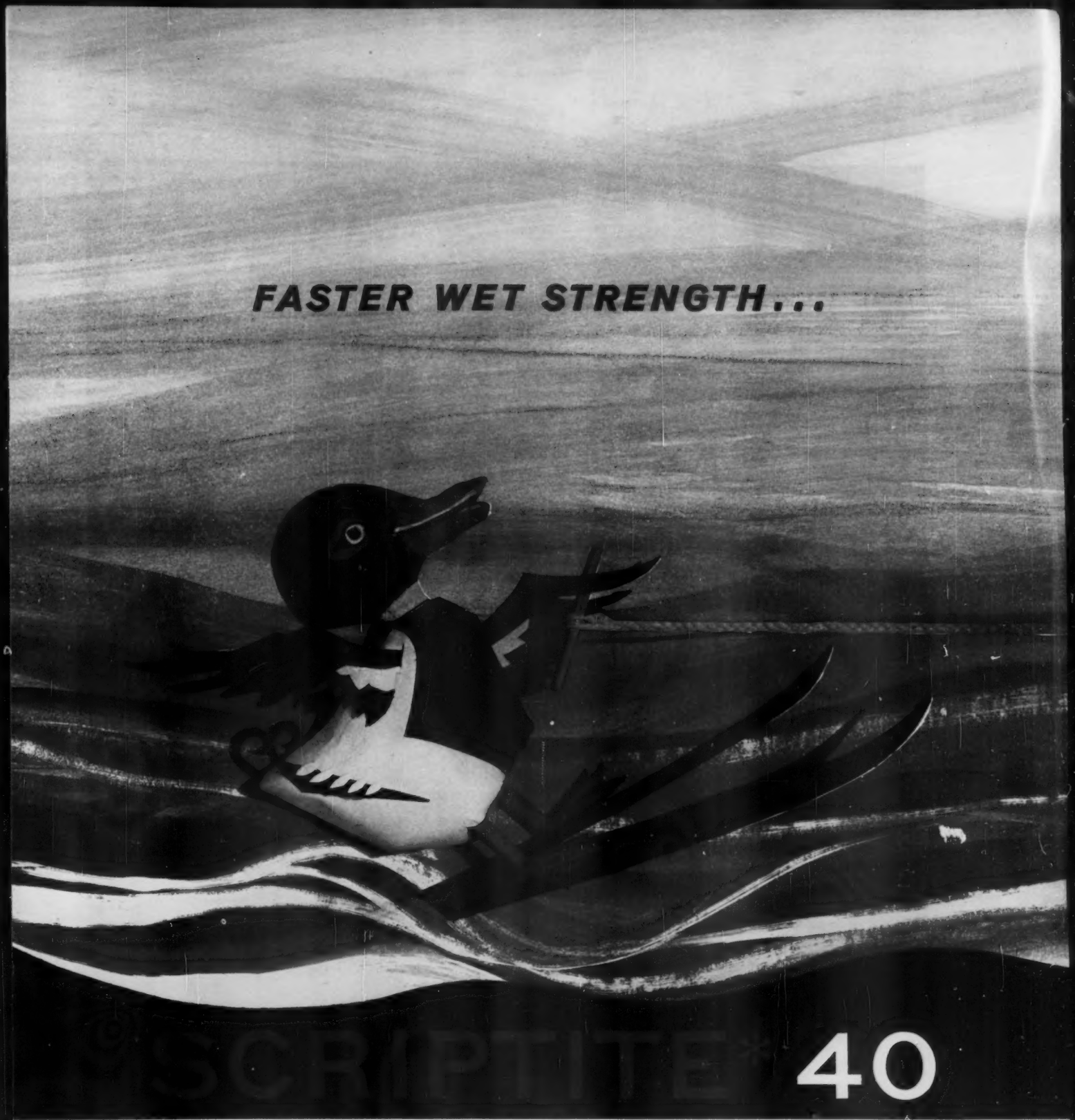
As the drawing illustrates, the screen in front of the superheater also uses the same principle of panel construction. As a consequence, gas passage through both the screen and the superheater is smooth and unimpeded. Slag build up is minimized, surfaces are cleaner, gas flow and heat absorption is uniform across the width of the furnace and soot blower action is much more effective.

Developed by, and exclusive with C-E, the panel type superheater and screen represents another significant achievement which has resulted from Combustion's continuing efforts to "make good equipment better." B-979

COMBUSTION ENGINEERING

Combustion Engineering Building • 200 Madison Avenue, New York 16, N. Y.

ALL TYPES OF STEAM GENERATING, FUEL BURNING AND RELATED EQUIPMENT; NUCLEAR REACTORS; PAPER MILL EQUIPMENT; PULVERIZERS; FLASH DRYING SYSTEMS; PRESSURE VESSELS; SOIL PIPE



a new concept in cationic urea-formaldehyde paper resins

In mill trials on unbleached and bleached kraft towelling, napkin stock and facial tissue, Scriptite 40 demonstrates a high degree of wet strength, off-the-machine and after natural aging. With minimum resin add-on high wet strength values are produced. Scriptite 40—a cationic urea-formaldehyde—also improves dry tensile, stiffness, mullen, wet rub resistance, folding endurance, internal sizing and pick resistance.

Evaluate Scriptite 40 in your operations. For samples, technical data and complete technical assistance, write to Monsanto Chemical Company, Plastics Division, Paper Resins Dept., Room 1904, Springfield 2, Mass.

MONSANTO

*SCRIPTITE: REG. U. S. PAT. OFF.

The Monsanto Line of Paper Resins also includes:

SCRIPTITE 54 ... *for outstanding water resistance and both wet and dry rub resistance.*

SCRIPTITE 52 ... *in combination with formaldehyde to give water resistance to folding boxboard and to jute liner.*

SCRIPTITE 50 ... *for unsurpassed printability and improved surface characteristics on boxboard.*

SCRIPTITE 33 ... *a melamine wet-strength resin.*

These modern instruments, valves and level controls are components of the Masoneilan Drying and Drainage System.

8 Important Savings

with Mason-Neilan Engineered Drying and Drainage Systems

Here is a way to improve operation of paper machines with modern high operating speeds and a wider range of operating pressures . . . use a completely Mason-Neilan engineered steaming and evacuation system. Mason-Neilan designs and supervises installation of the entire system — one-source with undivided responsibility for all equipment. These are the eight important advantages you get with these Mason-Neilan engineered systems . . .

IMPROVED QUALITY
Complete control of all driers prevents over drying of wood fiber and too rapid drying of the sheet.

INCREASED PRODUCTION
Continuous evacuation of condensate, air, and non-condensables from driers increases efficiency — permits greater machine speeds, increased machine capacity.

UNIFORMLY DRIED SHEET
Proper elimination of excess condensate and non-condensables results in more uniform drying across the entire drier shell surface.

REDUCED POWER REQUIREMENTS
Proper evacuation reduces drier load, thus cutting horsepower required.

IMPROVED HEAT TRANSFER
Proper evacuation increases drier efficiency, improves heat transfer to the sheet.

REDUCED MAINTENANCE
Optimum removal of condensate eliminates off-balance forces which can cause wear in drier journals and possible strain in machine drive and breakage of stationary siphon pipes.

STEAM ECONOMY
Cascading of steam from dry end to wet end sections in each group of driers results in more efficient utilization of steam.

LONGER FELT LIFE
Since most felt driers do not have a separate drive, but are driven by the felt, proper evacuation results in longer felt life.

NEW BULLETIN PRESENTS TYPICAL SYSTEMS AND CONTROLS . . . Mason-Neilan offers basic data on selection and application of Drainage Systems and the paper machine controls required. Contact the Mason-Neilan office nearest you, or write direct for your copy. Then, take advantage of this experienced engineering, call on Mason-Neilan for specific recommendations.

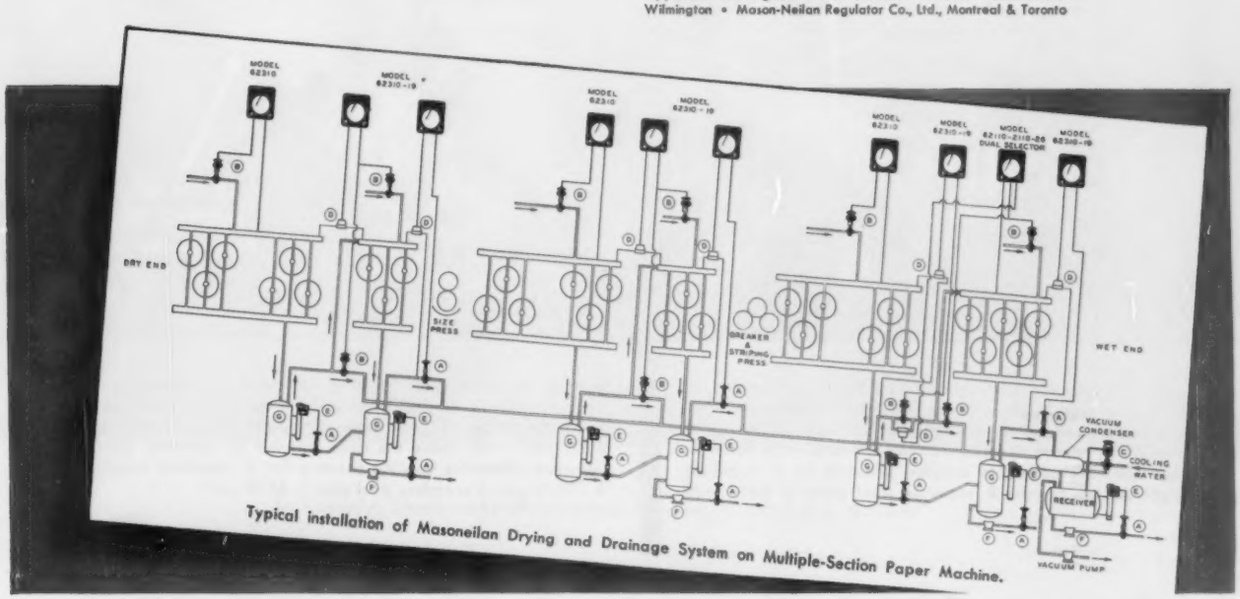
MASON-NEILAN

Division of Worthington Corporation

27 NAHATAN STREET, NORWOOD, MASS.

SEVENTY-FIFTH 75 ANNIVERSARY 1882 1957

Sales Offices or Distributors in the Following Cities:
New York • Syracuse • Chicago • St. Louis • Tulsa • Philadelphia
Houston • Atlanta • Cleveland • Cincinnati • Kansas City • Phoenix
Detroit • San Francisco • Louisville • Salt Lake City • El Paso
Albuquerque • Charlotte • Los Angeles • Corpus Christi • Denver
Appleton • Birmingham • New Orleans • Seattle • Jacksonville
Wilmington • Mason-Neilan Regulator Co., Ltd., Montreal & Toronto



Typical installation of Masoneilan Drying and Drainage System on Multiple-Section Paper Machine.

Always Stronger

Than

They Need Be!

MIDWEST

WELDING FITTINGS

Below are photographs of two of the many tests that have been made of Midwest Welding Fittings. The results are *always* the same . . . the seamless pipe to which the fittings are welded invariably bursts. There is *never* any sign of fitting failure or weakness.

There's good reason for this. We make elbows and tees of inherently stronger metal . . . the Midwest exclusive method of manufacture enables us to maintain greater minimum wall thickness, and to reinforce the fittings at points of greatest stress. For the many other advantages of Midwest Fittings, ask your Midwest distributor or write us for Catalog 54.

MIDWEST PIPING COMPANY, INC.

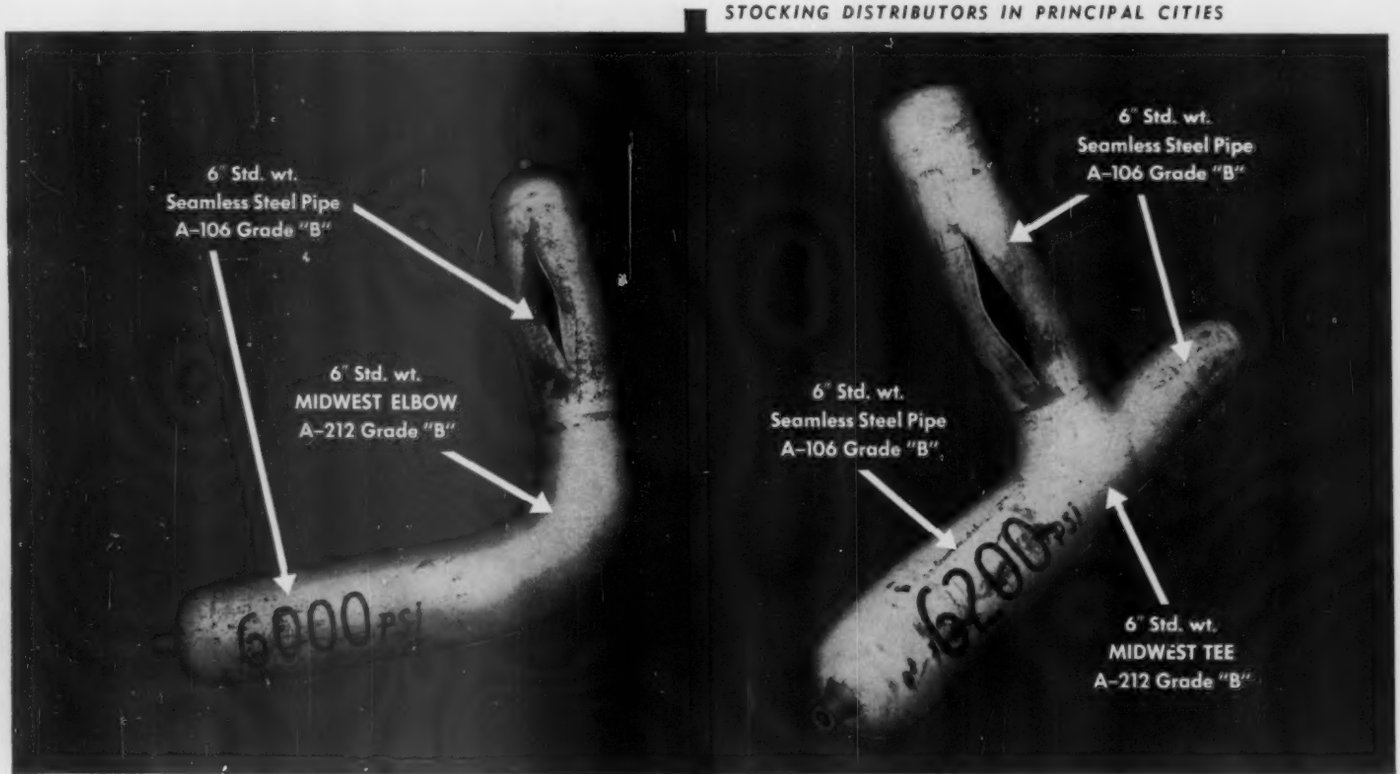
Main Office: 1450 South Second St., St. Louis 4, Mo.

PLANTS: ST. LOUIS, CLIFTON, N. J. and LOS ANGELES

SALES OFFICES:

ASHEVILLE (BOX 446, SKYLAND, N. C.) • BOSTON 27—426 FIRST ST.
CHICAGO 3—79 WEST MONROE ST. • CLEVELAND 14—616 ST. CLAIR AVE.
HOUSTON 2—1213 CAPITOL AVE. • LOS ANGELES 33—520 ANDERSON ST.
MIAMI 34—2103 LE JEUNE RD. • NEW YORK 7—50 CHURCH ST.
ONEIDA, N.Y.—282 NORTH MAIN ST. • SAN FRANCISCO 11—420 MARKET ST.
PITTSBURGH 19, PA.—437 GRANT ST.

STOCKING DISTRIBUTORS IN PRINCIPAL CITIES



Typical bursting test of stock Midwest Welding Elbow. As is always the case, failure occurred in the seamless pipe while the elbow was undamaged. Bursting pressure was 6000 psi . . . considerably above the required code minimum for seamless pipe. (Minimum allowable bursting pressure for 6" standard weight A-106 Grade B seamless steel pipe is 4438 psi.)

Bursting test of Midwest Welding Tee taken at random from stock. As always, the failure occurred in the seamless pipe and not in the fitting. The non-shock internal bursting pressure of 6200 psi is well above the code minimum for seamless pipe. (Minimum allowable bursting pressure for 6" standard weight A-106 Grade B seamless steel pipe is 4438 psi.)

7761

MIDWEST **WELDING FITTINGS IMPROVE PIPING DESIGN AND REDUCE COSTS**

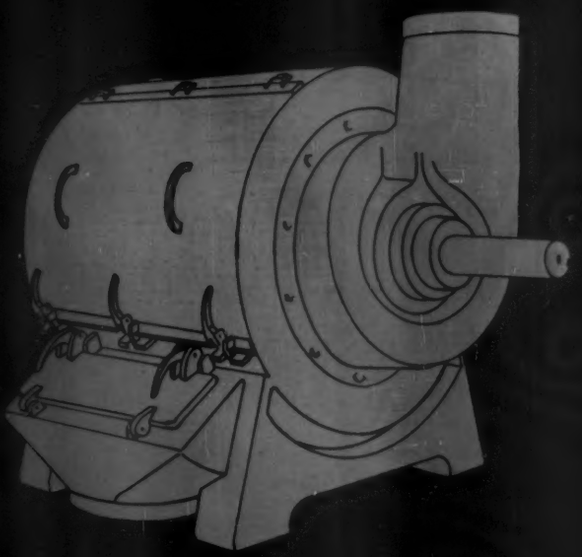
★ HIGHEST QUALITY ACCEPTED STOCK

★ HELICOIDAL STOCK INLET

★ FRACTIONATING SCREENING PRINCIPLE

★ REJECTS AT REFINING CONSISTENCY

★ ENGINEERED SIMPLICITY



CENTRIFUGAL SCREENING AT ITS VERY BEST

IMPCO®

IMPROVED MACHINERY INC.

NASHUA, NEW HAMPSHIRE

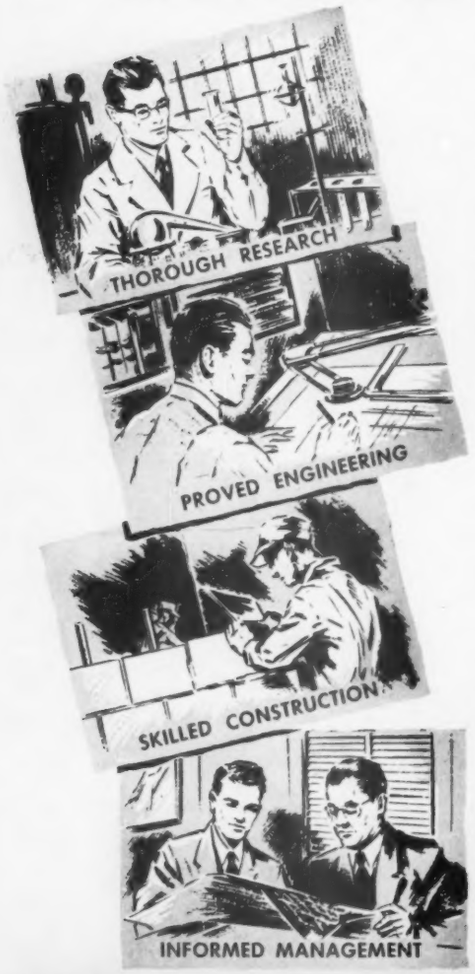
SEND FOR BULLETIN B2-1

Patent Applied For

In Canada, Sherbrooke Machineries Limited, Sherbrooke, Quebec

RESPONSIBLE

CONTRACT PERFORMANCE REQUIRES *All Four*



With processes changing so rapidly, your linings contractor must have a thorough knowledge of all of the chemical and physical requirements involved in the job.

With modern specifications so precise, he must have highly competent, specialized engineering and construction skills.

And his guarantee of contract performance has to mean something.

Stebbins unequalled standing in all four of these fields is your assurance of performance to the high standards established by your consulting engineers.

Complete Design, Construction and Maintenance of LININGS and TILE TANKS

SINCE 1884
Specialists in Design Installation and Servicing of Linings and Tile Tanks

SEMCO

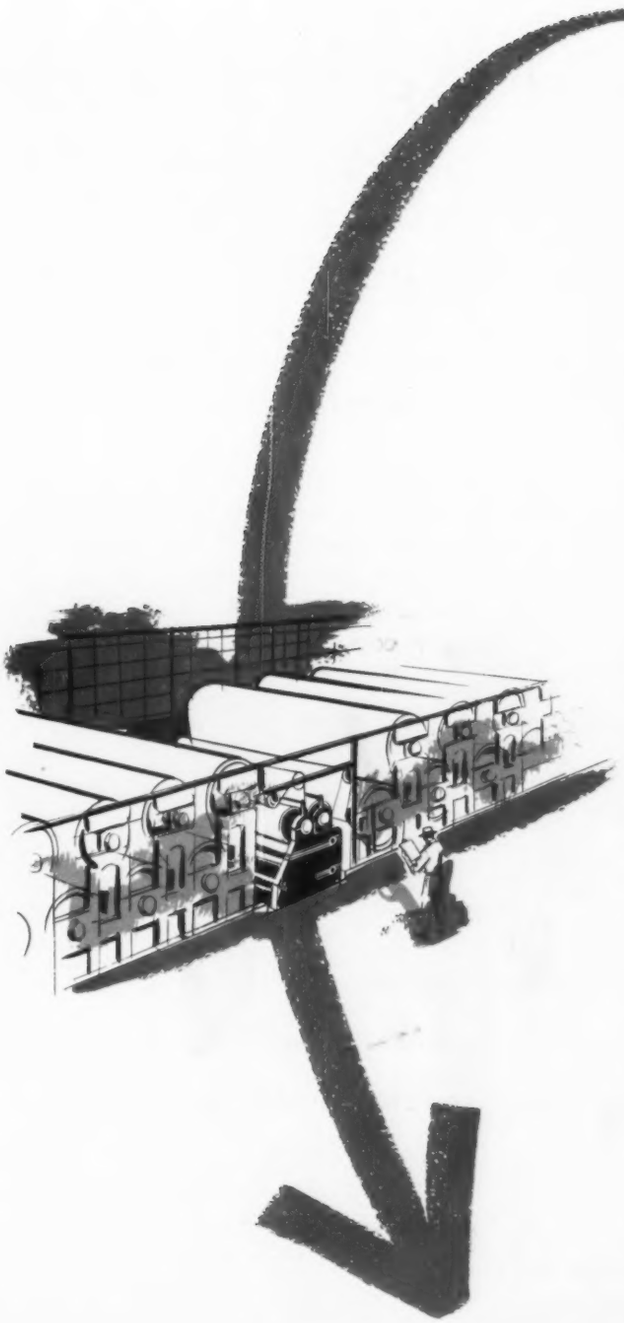
STEBBINS

Engineering and Manufacturing Company, Watertown, N. Y.

STEBBINS ENGINEERING CORP. – TOWER BLDG., SEATTLE, WASH.

CANADIAN STEBBINS ENGR. & MFG. CO., LTD. – TOWN OF MOUNT ROYAL, MONTREAL 9, CANADA

TEAR HERE FOR REFERENCE FILING



PAPER MACHINERY

new and modernized

Fourdriniers
Primary Press Sections
Main Press Sections (Plain and Suction)
Smoothing Presses (Wet & Intermediate)
Horizontal Size Presses
Dryer Sections
Breaker Stacks
Calender Stacks
Reels (Upright, Pope, Horizontal Track)
Unwind Stands
Rope Carrier Equipment
High Solids (50-65%) Coating Screens
Machine Drives—Cone Pulley, Long Center
Cone Pulley, *Short* Center
V-Belt, Short Center
Differential

by **PATTON**

THE PATTON MANUFACTURING COMPANY, INC. • SPRINGFIELD, OHIO

FAIRFAX 3-5595

822 W. PLEASANT ST.

PROGRESS

*SCAPA Synthetic-Content Dryer Felts

are WAY OUT IN FRONT!

(Reports from leading American Paper Mills)

NEWSPRINT:
"Scapa Synthetic-Reinforced Cotton Dryer Felt, Type 1164-S, ran 107 DAYS, allowed increased machine speed and lower steam consumption, against average felt run of 60 DAYS on Cotton or Asbestos Felts."

WRAPPER:
"Scapa Synthetic-Reinforced Cotton Dryer Felt, Type 1164-S, ran 102 DAYS against average run of 55 DAYS on Cotton Felts."

OFFSET PAPERS:
"Scapa Synthetic-Reinforced Cotton Dryer Felt, Type 1164-S, ran 200 DAYS, against average run of 50-60 DAYS on Cotton Felts."

GLASSINE AND LIGHT WEIGHTS:
"Scapa Synthetic-Reinforced Cotton Dryer Felt, Type 1164-S, established a record of 155 DAYS run, as against an average of 80 DAYS on Cotton Felts."

KRAFT AND BOARD:
"Scapa Synthetic-Reinforced Cotton Dryer Felt, Type 1166-S, with Green Dacron Edges (U.S. Patent No. 2, 612, 190) ran 212 DAYS, against an average of 180 DAYS - using Asbestos Felts."

NEWSPRINT:
"Scapa Syntho-Asbestos Dryer Felt, Type 3480-C, still running perfectly after 122 DAYS, as against an average of 45 DAYS on Asbestos Felts."

BOND:
"Scapa Syntho-Asbestos Dryer Felt, Type 3175-C, ran 140 DAYS with perfect satisfaction, as against average runs of 60 DAYS on Asbestos Felts."

9-POINT BOARD:
"Scapa Syntho-Asbestos Dryer Felt, Type 3480-C, gave a record run of 142 DAYS, against average of 90 DAYS on Asbestos Felts."

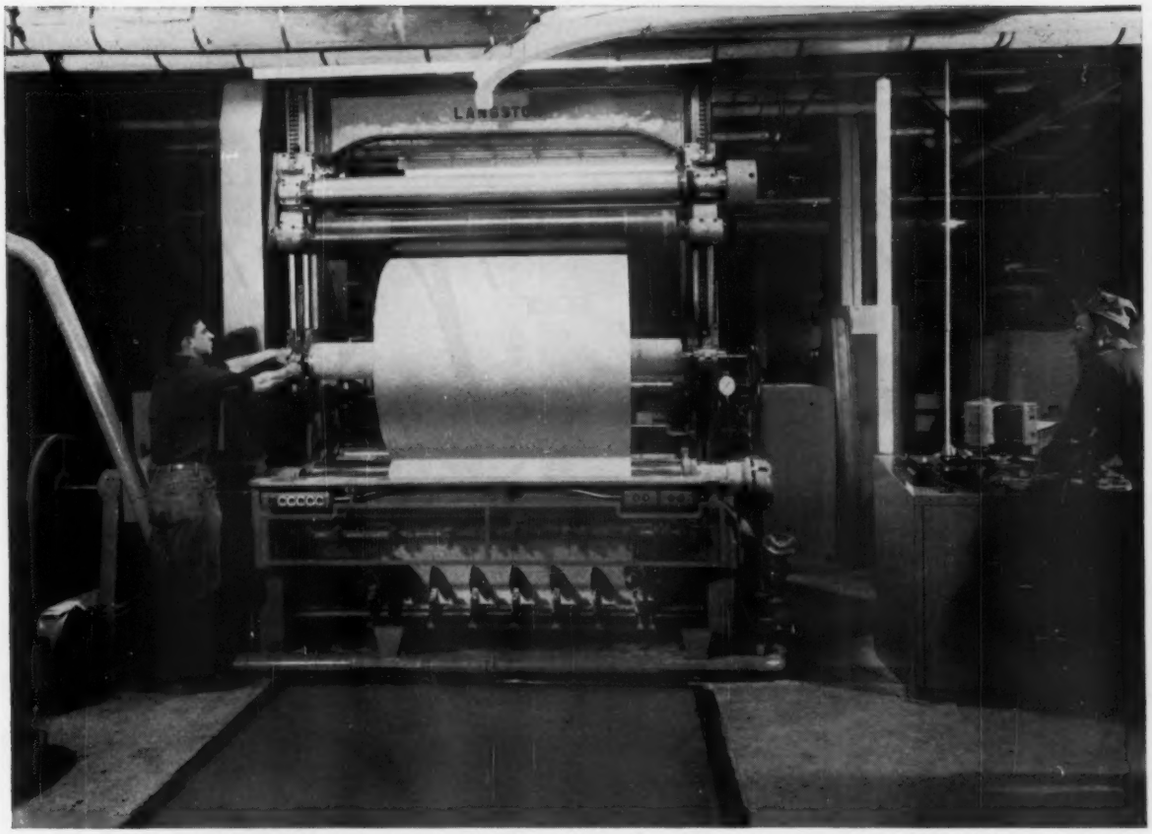
Increasing Efficiency, Cutting Costs
and Stimulating PROGRESS wherever they are used!

Morey Paper Mill Supply Co.
309 South Street, Fitchburg, Mass.

SOLE U.S. AGENTS FOR

SCAPA DRYERS, INC.
WAYCROSS, GA.

*U.S. Patents Pending



New 72-inch Type CA Langston Slitter and Winder in Marathon Corporation finishing room handles rolls up to 60 in. in diameter at speeds up to 1500 ft. per minute. Finished rolls are lowered by hydraulic drop shown in foreground.

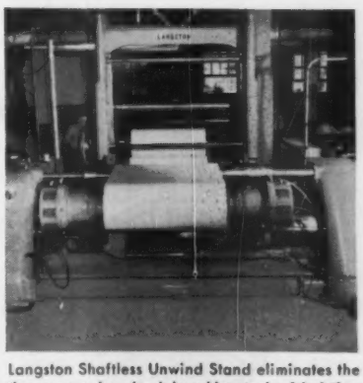
New Langston Slitter and Winder helps Marathon cut operating costs

This new Langston Slitter and Winder installation at Marathon Corporation's Rothschild, Wis., mill is already helping the company cut costs and speed processing of quality paper and board.

For example, the power-operated shaftless unwind stand with constant tensioning virtually loads itself. No crew is needed to bull heavy shafts into place. And the Langston hydraulic roll ejector permits 1-man removal of finished rolls. These two features alone are saving Marathon several thousand dollars a year.

Besides effecting major operating economies, these Langston machines also pay off in higher quality rolls. The hydraulic rider roll control, for instance, automatically keeps nip pressure constant, regardless of the diameter or weight of the rewound roll. This insures rolls of uniform density, free from wrinkling or tendencies to telescope. The shear-cut slitters cut like scissors instead of a knife, shearing cleanly and keeping paper dust to a minimum. The resulting clean-edged, dustfree rolls are easier for customers to process.

Learn how you can benefit from the advantages of Langston Slitters & Winders. Write SAMUEL M. LANGSTON CO., 6th & Jefferson Sts., Camden 4, N.J.



Langston Shaftless Unwind Stand eliminates the time-consuming, back-breaking task of hoisting heavy shafts into place. The hydraulically actuated arms reach out, pick up the roll and lift it to running position—a 1-man, push-button operation.

LANGSTON Leadership...by design

bilt-rex

synthetic resins

for

TUB SIZE and
CALENDER STACK
OPERATIONS

R·T·VANDERBILT·CO·INC· BILT-REX AMERICAN PRODUCTS

Write for details

R. T. VANDERBILT CO., INC.

230 Park Avenue, New York 17, N. Y.

Retailers Look at . . .

Packaging

. . . tell industry how to improve packages and what retail problems are . . .

First Place Goes to Toy Box . . .

. . . made by National Container Corp., Long Island City, N.Y., for carry-home packs in the Fibre Box Assn. annual competition.

● Better packaging can mean as much as $3 billion in reduced costs and increased sales for the nation's food retailers, a survey by the Folding Paper Box Association reveals.

Top executives of 203 retail food and grocery organizations operating 25% of the nation's supermarkets, found that retailers believe packaging improvements can mean these things to the average million-dollar supermarket each year: (1) cost savings of up to $45,000; (2) increased sales as much as $75,000; (3) extra net profits of $2300.

Shipping Container . . .

. . . developed by Gaylord Container Corp., div. of Crown Zellerbach Corp., St. Louis, Mo., won first prize for surface design and printing in the annual Fibre Box Assn. competition.

Opportunities . . .

Food retailers see these as major packaging opportunities (in order of importance):

Meats: Better trays for chicken parts, more pre-packaging by suppliers, more product visibility, packages that will assure longer shelf life.

Produce: Packages that will reduce spoilage, more pre-packaging by suppliers, better product visibility.

Dairy: More product visibility, leakproof milk cartons.

Baked Goods: Better looking packages, greater product visibility, stronger packages.

Frozen Foods: More windows for specialties, better and brighter labeling, stronger packages.

Groceries: Better price marking spots, improved labels, better product visibility, better stacking, multi-packs, stronger packages, uniformity of size.

Health & Beauty Aids: Reduce pilferage by carding or boxing small items, reduce breakage through use of plastic, metals, etc., brighter packages to compete with food items.

Housewares: More and better packaging, reduce pilferage by carding or boxing small items.

Problems . . .

Retailers named these packaging problems:

Meat: Major: Chicken part trays are unsatisfactory, awkward to handle; minor: limited shelf life of many meats, discoloration of luncheon meats.

Produce: Major: control of freshness; minor: too little pre-packaging by suppliers.

Dairy: Major: high handling costs of milk; minor: leakage of milk cartons.

Baked Goods: Major: products too easily damaged.

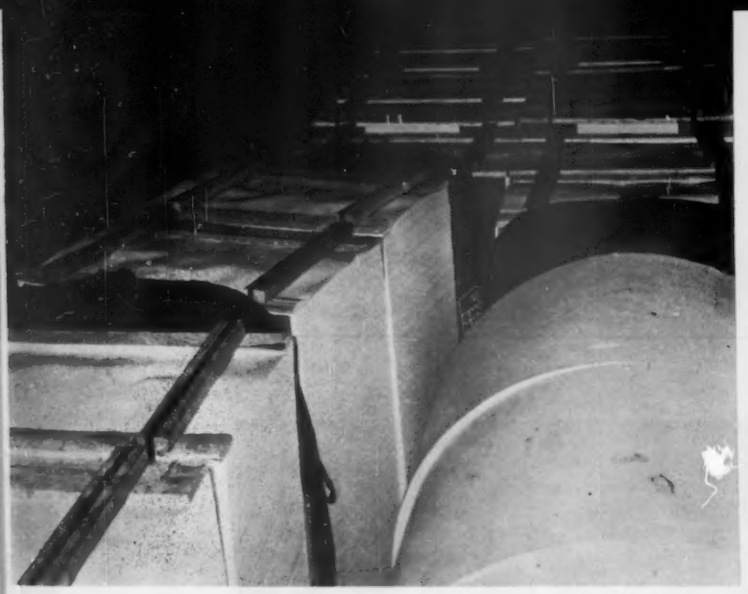
Frozen Foods: Major: many packages—especially specialties—take too much space in relation to their dollar volume; minor: packages come apart too easily.

Grocery: Major: breaking and spilling; minor: selling units not compact enough, difficulty of price marking.

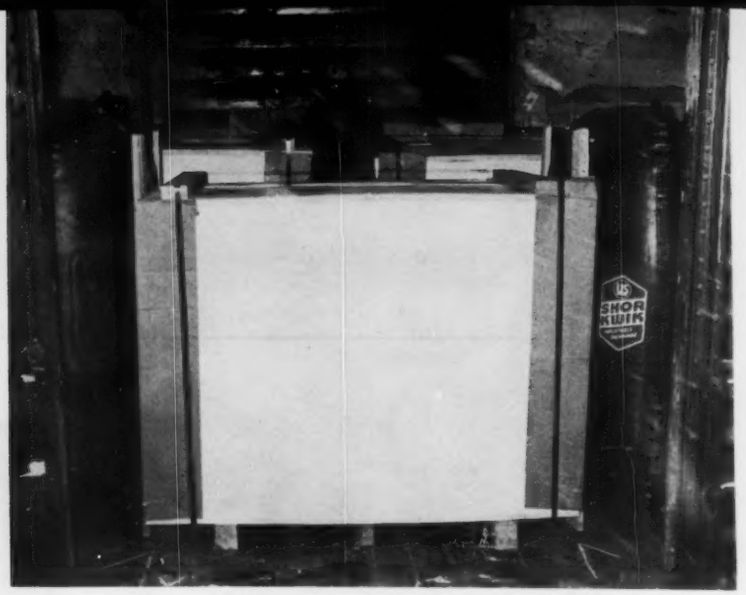
Health & Beauty Aids: Major: pilferage; minor: stacking.

Housewares: Major: pilferage.

Full details of the study are available from the Folding Paper Box Assn. of America, 222 West Adams St., Chicago 6, Ill.



Mixed Carload Travels Safely . . .
Marathon Corp. shipped rolls and sheeted carton board on skids, weighing 70,000 lbs., from Menominee, Wis., to Wausau, with Shor-Kwik dunnage absorbing bumps. Marathon reports use of Shor-Kwik resulted in 80% decrease in transit damage.



How to Place Shor-Kwik in Loading . . .
Proper placement of Shor-Kwik dunnage, plus use of boards along ends of pallets, eliminates tendency to belly or concave if dunnage is placed below top edge of pallet.

New Inflated Rubber Dunnage Protects Paper Shipments and Saves Money . . .

This is first story and pictures of new U.S. army-sponsored dunnage which received official management "blessing" at a recent National Paperboard Assn. meeting . . . and is popular with paper and board mills

A new kind of dunnage, Shor-Kwik, developed for the U.S. Army Quartermaster by U. S. Rubber Co., is reducing shipping damage for about 15 paper mills, including Marathon Corp., Champion Paper and Fibre Co., Masonite Corp., Container Corp. of America, Cornell Paperboard Products and Waldorf Paper Products Co. Marathon and Container Corp. were the first commercial enterprises to use Shor-Kwik.

A casing of neoprene-coated nylon encloses a rubber bladder, similar to a football. The butyl rubber bladder is for air retention and the casing is designed to withstand abrasion.

Al Baenke, carloading engineer at Marathon's Menasha, Wis., mill, says it has shipped about 3,500 cars of carton board on skids from Menominee, Mich., to Menasha and Wausau, Wis., a distance of about 100 mi., with "very satisfactory results." Damage to sheet edges that occurs when sheets are not properly jogged on the load has been reduced to a minimum, he says. The printing department reports improved operations of equipment due to better condition of the sheet edges. The mill has also shipped several carloads of roll stock to Marathon's Newnan, Ga., plant with equally good results.

Mr. Baenke reports that use of Shor-Kwik allows loading additional tonnage in the cars, with a substantial reduction in bracing costs.

Reports from Other Mills . . .

Jack Williams, traffic mgr., Cornell Paperboard Products, Milwaukee, Wis., says they put in pressure up to 10 lbs. per sq. in., then let it down to 4 or 5 lbs. Acting as a cushion, Shor-Kwik stops shifting loads and pinches them back in position, eliminating the need for crossbars and other bracing devices.

Container Corp. of America is using Shor-Kwik on rough hauls between Philadelphia and Boston and from its Chicago plant to a customer in south Chicago. Shipments survived impacts of over 11 mi. per hour. The time required to dunnage a car was cut from four man-hours to less than ten minutes. They use 4 to 4½ lbs. pressure, and an average of four bags to a car.

On a stop-over car, Shor-Kwik can be used only on the first load out. When a load settles in transit, voids become larger and the bag expands to fill them, thus decreasing air pressure in the bag but still holding the load in place.

Shor-Kwik has an expected service life of three years and carries the standard company warranty for workmanship and material. A 4 x 5 ft. bag (inflated size) costs $69.50. A 4 x 6 ft. bag at $79.50 has been introduced recently and seems to be more popular with paper mills as it provides more bearing against the load.

W. F. Amies, Gen. Mgr., Aylesford Mills, Albert E. Reed & Co.

. . . was formerly gen. mgr. of Tovil and Bridge Mills of the English firm. He joined the Reed Group in Feb. 1946, after seven years experience in the industry. This picture was taken by PULP & PAPER during Mr. Amies' recent visit to the U.S.

Over 150 Mergers and Acquisitions

That seems like a lot, but is actually less than in the twenties, and the pulp, paper, paperboard and converting industry remains one of the most competitive and least concentrated of all the major industries, according to business and financial authorities.

This unofficial tabulation, prepared by PULP & PAPER, lists mergers and acquisitions that have taken place in recent years:

Acquiring Company	Company or Companies Acquired
Albemarle Paper Mfg. Co.	Raymond Bag Co., Interstate Bag Co.
Allied Paper Corp.	Osborn Paper Co., Midwest Paper & Envelope Co., Sharon Div. of Osborn Paper Co.
Alton Box Board Co.	Rosenthal Paper Co.
American Box Board Co.	Detroit Container Co.
American Can Co.	Dixie Cup Co.
American Seal-Kap Corp.	United Can Co. and affiliates
Bergstrom Paper Co.	Whale Safety Paper Co.
Bonded Fibres, Inc.	Piedmont Paper Products Corp.
Brown Co.	Blacfiber Pipe Co., Granite State Veneer, Inc., Plywood Products, Inc., Stratford Realty Corp.
Brown and Bigelow	Herb-Shelly, Inc.
Robert Busse & Co.	Klean Kan Bag Co., B. H. Jordan Paper Co.
Cauthorne Paper Co.	James River Pulp Corp.
Central Fibre Products Co.	Mapes Consolidated Mfg. Co.
Champion Paper & Fibre Co.	Dairypak Inc., Bond-Sanders Co., Mid-West Bottle Cap Co.
Chemical Paper Mfg. Corp.	Crocker-McElwain Co.
Chesapeake Industries	Stanley Greetings, Inc.
Container Corp. of America	Traver Corp. of Chicago, Wayne Paper Box & Printing Corp.
Continental Can Co.	American Paper Goods Co., Carl Leigh Associates, Robert Gair Co. Inc., Hazel-Atlas Glass Co.
Cornell Paperboard Products Co.	National Carton Co.
Crown Zellerbach Canada, Ltd.	Bartram Paper Products, Ltd.
Crown Zellerbach Corp.	Gaylord Container Corp., St. Helens Pulp & Paper Co.
Diamond Match Co.	General Package Corp., Gardner Board and Carton Co.
Doeskin Products, Inc.	Sitrue, Inc.
Dominion Tar & Chemical Co.	Howard Smith Paper Mills, Ltd.
Dow Chemical Co.	Dobeckmun Co.
East Texas Pulp & Paper Co.	Piedmont Carton Co.
Federal Paper Board Co., Inc.	Morris Paper Mills
The Flintkote Co.	Kosmos Portland Cement Co., Insulrock Corp.
Robert Gair Co. Inc. (see Continental Can)	Southern Advance Bag & Paper Co., Great Southern Box Co.
Gardner Board & Carton Co.	Yoder Engraving Co.
Georgia-Pacific Corp.	Hammond Lumber Co., Coos Bay Lumber Co., Feather River Pine Mills, Inc.
Greenwood Packaging Supply Co.	N.B.C. Sales Co., Inc.
W. C. Hamilton & Sons	Michigan Paper Co.
Hudson Pulp & Paper Corp.	Hammond Multiwall Bag Div.
International Paper Co.	American Paper Exports, Inc., Long-Bell Lumber Co.
Kaiser Gypsum Co., Inc.	Fir-Tex Insulating Board, Inc.
Kimberly-Clark Corp.	International Cellucotton Products Co., Reed Paper Hygiene, Ltd., England, Neenah Paper Co., Peter J. Sweitzer, Inc.
Krafco Corp.	Champion Container Corp. of Dallas
Lawson & Jones, Ltd.	Quality Paper Bags
Ludlow Mfg. & Sales Co.	Angier Corp., Stocker Mfg. Co.
Marathon Corp.	Michigan Carton Co.
The Mead Corp.	Chillicothe Paper Co., Atlanta Paper Co., Jackson Box Co., Palm Container Corp., Packagemaster, Ltd., York Container Co., Container Corp., Delavans, Inc., Industrial Container and Paper Corp.
Minnesota Mining & Mfg. Co.	Hartford City Paper Co.
Modena Paper Co.	Hopper Paper Co.
Mullen Container Corp.	Phoenix Industries, Inc.
Narrow Fabric Co.	Wyomissing Glazed Paper Co.
National Envelope Corp.	Envelope Manufacturing Co.
Nekoosa-Edwards Paper Co. (see Orchard Paper Co.)	Racquette River Paper Corp. (paper mill div.)
New Haven Board and Carton Co.	Bartgis Brothers Corp.
North Carolina Pulp Co.	Eureka Lumber Co.
Olin Industries, Inc.	Mathieson Chemical Corp.
Orchard Paper Co.	Racquette River Paper Corp. (converting div.)
Owens-Illinois Glass Co.	National Container Corp., Northeastern Container Corp.
Oxford Paper Co.	Oxford Miami Paper Co.
Pabco Products Inc.	Fibreboard Products Inc.
Packaging Corp. of America	Ferguson-Lander
Philip Morris Inc.	Milprint, Inc.
Phillips Control Corp., subsidiary of Allied Paper Corp.	Deltronic Corp., subsidiary of Signal Oil and Gas Co.
Portco Corp.	Simpson Logging Co.'s Plastic Plant Div.
Potlatch Forests, Inc.	Southern Lumber Co., Deer Park Pine Industry
Powell River Co. Ltd.	Brooks-Scanlon Inc.
Procter & Gamble	Charmin Paper Mills, Inc.
Puget Sound Pulp & Timber Co.	Anglo-Canadian Timber Products, Ltd., Eureka Mills, Ltd.
Rayonier Inc.	Alaska Pine & Cellulose, Ltd.
Riegel Paper Corp.	Norman Lumber Co.
St. Lawrence Corp., Ltd.	154,234 common shares of Price Bros. & Co., Ltd.
St. Regis Paper Co.	Superior Paper Products, Pollock Paper Corp., Kline Mfg. Co., General Container Corp., Ajax Box Co., Gummed Products Co., Chester Packaging Corp., Pacific Waxed Paper Co., Cambridge Corrugated Box Co., J. Neils Lumber Co., St. Paul and Tacoma Lumber Co., Rhinelander Paper Co., 40% interest in Growers Container Corp.
Scott Paper Co.	Detroit Sulphite Pulp & Paper Co., Hollingsworth & Whitney Co., Westminster Paper Co., Ltd., Soundview Pulp Co.
Simpson Redwood Co., subsidiary of Simpson Timber Co.	M & N Wood Working Co., Northern Redwood Lumber Co.
Smith-Stewart Paper Products, Inc.	Mary Robbins Gift Wrapping Div. of Robbins Publishing Co.
Sutherland Paper Co.	Fort Orange Paper Co., Reish Products, Inc.
Thor Corp.	Allied Paper Mills
Union Bag-Camp Paper Corp. (see below)	American Creosoting Co., Argent Lumber Co., Allied Container Corp.
Universal Match Corp.	International Tag & Salesbook Co.
Westminster Paper Co. (See Scott Paper Co.)	Crabtree Mills of Howard Smith Paper Mills, Ltd.
West Virginia Pulp & Paper Co.	Hinde & Dauch Co.
Weyerhaeuser Timber Co.	W. A. Woodward Lumber Co., Eddy Paper Corp., Kieckhefer Container Co., North Carolina Pulp Co.
MERGERS—New Companies	
Allied Paper Corp. and A.P.W. Products Inc.	*Formed* Allied-Albany Paper Corp.
Boise Payette Lumber Co. and Cascade Lumber Co.	" Boise Cascade Lumber Corp.
Fibreboard Products Inc. and Pabco Products Inc.	" Fibreboard Paper Products Corp.
Union Bag & Paper Corp. and Camp Mfg. Co., Inc.	" Union Bag-Camp Paper Corp.
WHOLSALER MERGERS	
Dillard Paper Co.	Dixie Paper Products, Inc.
Fox Paper Co.	Spaugh Paper Co.
General Paper Products Co.	Hudson Paper Co.
Hubbs & Howe Co.	Hubbs Paper Wrapping Div. of Buffalo K. Chemical Co.
Ideal Paper Co.	Fred H. French Paper Co.
Lathrop Vandewater Paper Co.	John Floyd Co.
J. E. Linde Paper Co.	Lathrop Vandewater Paper Co.
Paper Products Co. of Visalia	Chandler Janitor Supply Co.
Pierce Paper Co.	Raymer & Co.
Prime Paper Corp.	William Goodbody Envelope Co.
Smith-Scharff Paper Co.	Streibich Paper Co.

Dryden Success Story . . .

. . . A Canadian mill "reverses its field" (as they say in football) and shifts emphasis from paper to bleached kraft pulp

BY ALBERT W. WILSON
Editor, PULP & PAPER

Dryden, Ont.

● Enthusiastically and powerfully backed by owners of the London *Daily Mirror*, which has by far the greatest daily circulation of any newspaper in the world (4,650,000), and Anglo-Canadian Pulp and Paper Mills Ltd.—both are now its parent companies—the Dryden Paper Co., Ltd., has jumped into the market pulp field with both feet.

In doing so, Dryden bleached kraft has created some pretty big waves, reaching farther and farther into the market pulp world. So PULP & PAPER decided to see firsthand what has been happening to this mill in the remote North Woods country of northwestern Ontario, dotted with literally hundreds of quiet lakes and every one of them surrounded to water's edge by hundreds of miles of forests of thick, straight-growing spruce or jackpine.

Dryden has had a roller-coaster kind of history since it was built in 1913. It went through bad periods that nearly closed its doors a couple of times. A canny Scot, John Wilson, is credited with saving it after the depression, by taking a hard, cold look at every proposal to purchase anything from nails to paper machines. (The word that passed around the little Canadian town when he came was that he had been named manager to close the mill.)

But after the second World War, another kind of leadership and vision was needed. A man to fill the need was found—Lorne Goodall, who had served in engineering and management with Provincial Paper. Considerable rebuilding and modernization were carried out under him from 1949-1953. In that year Anglo-Canadian Pulp & Paper Mills, one of Canada's biggest, owned in turn by the *Daily Mirror*, took over the controlling interest. It is not surprising that Anglo-Canadian had its eyes on the growing Dryden mill, since the Anglo Group (Anglo-Canadian Pulp and Paper Mills, Ltd., Anglo Newfoundland Development Co., Ltd. and Gaspesia Sulphite Co.,

1. **BLEACH PLANT. Brightness range 89-90 plus. Five stages, two of chlorine dioxide. Upflow ClO_2 tower. System of mirrors, pushbutton controls for easy operation. More stainless steel than usual. A gamma ray level gauge. Dynamatic couplings for drives.**

2. **CHEMICAL PREPARATION PLANT. One of largest ClO_2 plants in world (Olin Mathieson system). Chlorine, sulfur dioxide and sulfuric acid unloaded outside, caustic soda and sodium chlorate inside, all by tank cars, with exceptional safety arrangements. Unusual piping for gas and chemical lines, such as pyrex in wire mesh, saran, Dekoron, polyvinyl chloride and porcelain piping.**

3. **WATER FILTRATION. Unusually satisfactory water conditions in this clay, sand and muskeg country. A modest and simple plant using North filters does a very good job.**

4. **WOOD PREPARATION. Large, entirely new, 320 by 110 ft. plant, almost completely automatic. Central station, with TV set alongside single operator shows chips feeding in bins 80 ft. above. Cone station controls a big cable bringing wood into mill and all operations inside room. Five new barkers, one helical knife-type chipper.**

5. **DIGESTERS. Four new mild steel digesters (1⅜ in. thick plate). Total number of digesters: 11. Esco circulation through Swedish plate type heaters instead of tubular, which are said to reduce scaling. Chips, stored at ground level, fed to digesters as needed. Remotely controlled with TV set.**

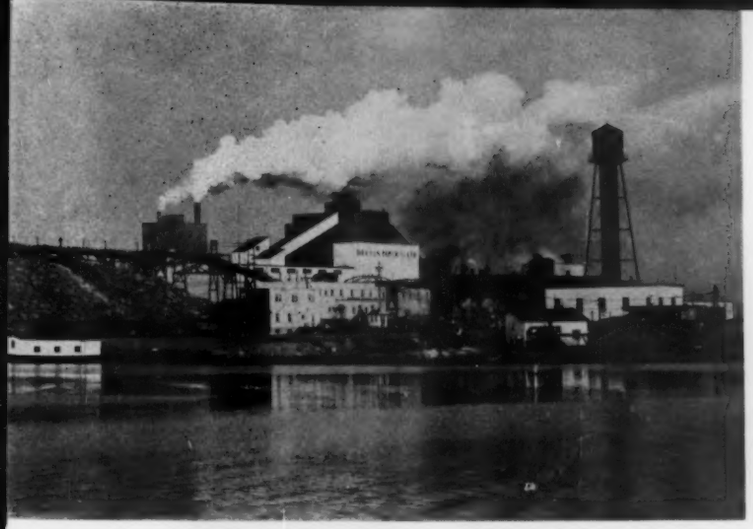
6. **WASHING AND SCREENING. Four stage brown stock washing and unbleached and bleached stock screening systems. Also two stages of Centri-Cleaners. Central controls for systems all together (panels in line). Use of Dynamatic couplings on drives, varying speed via magnetic fields.**

7. **RECOVERY AND POWER. Six body Swedish design evaporator duplicates existing unit. New 150,000 pph Babcock & Wilcox lignite boiler alongside existing one. Combustion Engineering 200 ton recovery boiler installed three years ago. Precipitator in future planning.**

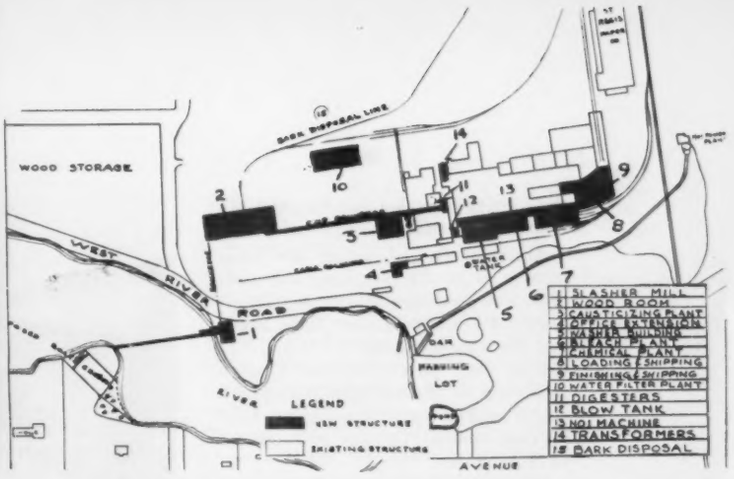
8. **NEW CAUSTICIZING PLANT replaced old batch process, liberally built by Dorrco for 500 tons pulp capacity. Lime kiln in future planning.**

9. **MACHINE ROOM AND FINISHING. No. 1 machine completely rebuilt as pulp dryer, with Oliver sheet former (11½ ft. diameter by 131 in. face) instead of Fourdrinier to get bigger production per inch of width (300 tons capacity). Baby press, two main presses, pre-dryers, smoothing press, and five sections of dryers. Sectional GE drive with electronic amplidyne control. Completely enclosed Ross Hooper hood. Lamb-Grays Harbor automatic finishing system.**

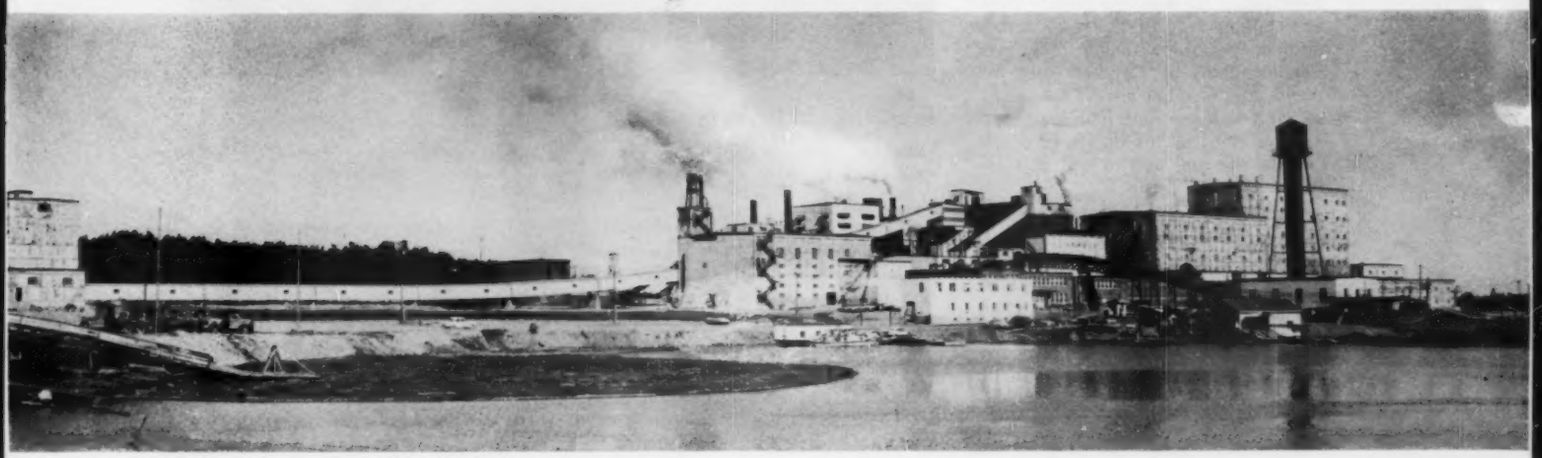
10. **WOOD PRODUCTION. Dryden is running about 60% spruce, 40% jackpine, at present. For story of forests and production methods used there—see PULPWOOD SECTION.**



To Dryden's Old Mill . . .



Were Made These Additions (darkened areas) . . .



And Now . . . an Expanded "New" Mill . . .

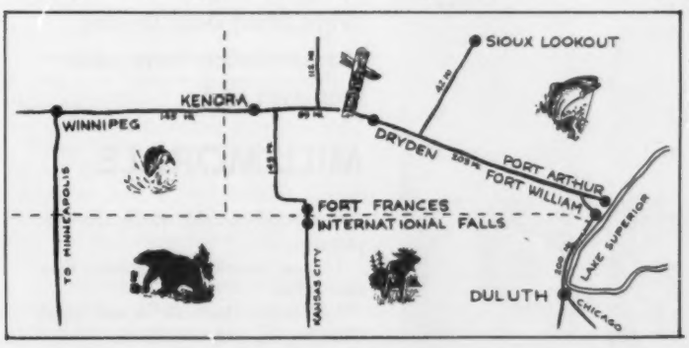
New chemical preparation plant, washer plant, bleach plant—extreme right. New causticizing building in center of picture. Enclosed conveyor leads to left to corner of new woodroom.

Ltd.) felt that a kraft mill would fit into their organization and round out their products.

Since 1953 another $16,000,000 or so has been poured into Dryden. Production has been doubled to an annual tonnage of 142,000 a year. Virtually all of the increase is in double-chlorine dioxide bleached sulfate pulp. This is a product entirely new to the Anglo group of mills, which make market sulfite, newsprint and paperboard.

To get the picture of what has happened at Dryden, consider that two-thirds of its production is now in market pulp and only one-third in paper. It had been just the reverse, although at that time it could divide its products 50-50 between pulp and paper. It has considerable flexibility now. While the range of its paper products is not great—liner, bag, wrapping, MG and waxing—these are being diversified. Bag paper is trucked to an adjacent St. Regis bag plant for finishing.

Bleached pulp capacity is now 350 tons a day. Paper tonnage can range from about 150 to 200 tons.



Anglo Mill Group Plans Another Mill . . . in future years at Sioux Lookout

Plenty of wood here for both Sioux Lookout and Dryden. PULP & PAPER Editor reached Dryden by Trans-Canada highway through North Woods country. Dryden is just about half way between Winnipeg and Lake Superior cities of Port Arthur and Fort William. It is about 200 miles north of the International boundary at International Falls, Minn.

How the Job Was Done . . . And Who Did It . . .

Most of the engineering and drawings for Dryden expansion were done in Quebec City by staff of the General Engineering Division of Anglo-Canadian mills and its associated mills, with ROBERT J. CHAMBERS, asst. chief engineer, heading up this work. Bob Chambers, recently elected a Dryden director, was born in Winnipeg and graduated from Queen's University with honors and earned a master's degree in chemical engineering there.

All selection of equipment was discussed by Mr. Chambers with the staff at Dryden. The Dryden engineers supervised all installations and

did the engineering for the digester house and finishing room additions.

Much of the laboratory and technical work for the bleaching and other chemical processes was under supervision of DR. KEN LOGAN, who heads up the Anglo group's research in Qubec City. Several of the Dryden staff went to Quebec City and eastern Anglo plants for training, and they in turn trained Dryden staff in the new processes.

E. LORNE GOODALL is president of Dryden, a position he has held for eight years. He was also general manager but in May of this year a new resident general manager took over responsibilities at Dryden—JOHN W. WING. Mr. Goodall always has maintained residence and offices at Port Arthur, Ont., as his duties take him both to the mill and to eastern Canada on Dryden business.

Mr. Wing, former v.p. and general manager of the Gaspesia Sulphite affiliate, had just been at Dryden a short time when PULP & PAPER visited the mill. He has been engineer and manager in Anglo mills for many years since joining the company in 1936. He also has quite an athletic record—once being a Canadian champion canoeist as well as Queen's U. football captain and hockey star. He was born in Gananoque, Thousand Isles, just across the line from Watertown, N.Y.

Other key operating men at Dryden:

DON H. MAUNSELL, a 35-year man with Dryden who is mill manager.

Executives at Dryden . . .

Mill Mgr. Maunsell (left) points out new construction to President Goodall. At far right, John W. Wing, new general mgr. with an illustrious Anglo mills career.

TOM S. JONES, manager of industrial relations who was a wartime lieutenant-colonel and a trade association manager before joining Dryden two years ago.

NORMAN HOWE, general supt., a 29-year man with Dryden.

ALEC GLEN, recently brought in as chief engineer from the Gaspesia engineering staff, a McGill graduate.

R. MUNDON BISHOP, development supt., formerly widely known in the industry when with Hercules Powder Co.

E. G. MACDONALD, former veteran chief engineer, now in charge of development engineering.

W. E. HAVILAND, assistant to the general supertendent, a McGill chemical engineer.

NORMAN HARDY, personnel supervisor and a Dryden man.

Sales of the new Dryden bleached pulp is handled by two Anglo affiliated companies—Anglo Paper Products Ltd. in Canada and Northeastern Paper Sales Inc. in the U.S. Heading this up is DR. ALLAN HILL, exec. vice president, who was a former manager of Gaspesia Sulphite and director of the Anglo Group Chemical research activities, and has an illustrious technical background. His team handling Dryden pulp includes VICTOR R. COUDERT, JR., in New York; DON SMITH and ROLAND LECLAIR in Chicago; D. W. REYNOLDS and C. W. KERR in Montreal, and C. J. PURKISS, in Toronto.

CHAMBERS

HILL

LOGAN

JONES

HOWE

GLEN

BISHOP

MACDONALD

What Effect Does Dryden Modernization Have upon Employes and

MILL MORALE

Gen. Supt. Norman Howe says employes are:

1. More conscious of efficiency than ever before
2. More enthusiastic about good housekeeping and cleanliness
3. Required to give more emphasis to training . . . lead men must spend more time with helpers
4. Working a full seven-day week now in pulp mill and bleach plant. . . .

1. Bleach Plant . . .

. . . sequence developed by Anglo researchers as most economic way to get brightness wanted . . .

All Bleaching Controlled Here . . .

Each stage has own console. Only one operator needed in this elevated room. System of mirrors gives him view of all washer actions. Foxboro controls are used for levels, flows, agitators, rakes, drives, showers—all interlocked so if one kicks out the whole stage kicks out. Also on consoles are a Dynamatic Corp. (Kenosha, Wis.) control for washer feeder speed variation via magnetic field. Stock flow may be varied. All recording instruments are on panel at left.

DRYDEN

. . . there are long retention lines in the towers to get a maximum brightness and minimum deterioration. The new upflow tower for chlorine dioxide is used. The sequence: 1, chlorination, 2, caustic extraction, 3, chlorine dioxide, 4, caustic extraction, 5, chlorine dioxide. The plant is 168 by 55 ft. and 108 ft. high—four floors.

All piping is stainless in stock and white water except for small amounts of rubber lined pipe.

Unbleached stock from the blending chest in the washer building is pumped through a Kamyr stock pump acting as a booster pump through a DeZurik enclosed consistency regulator, a Fischer & Porter flowrator and a Kamyr chlorine pre-mixer before entering the chlorination tower. The pre-mixer has a rubber cover mild steel shell, Type 317 stainless steel impeller and Hastelloy C chlorine inlet.

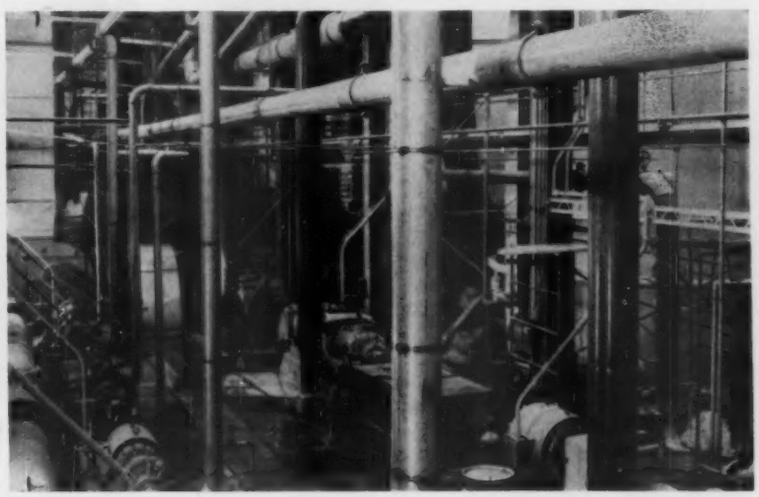
The chlorination tower is of Kamyr design and is 15 ft. in diameter by 90 ft. high and is designed for 90 minutes retention time at 378 tons per day and 3½% consistency. The tower consists of a steel shell and a 3 in. total thickness lining made up of 1½ in. Portland cement. An impervious synthetic membrane also protects the steel shell at any openings or nozzle inserts.

The Kamyr CR-4 agitator and the scraper and spray ring at the tower top have all parts in contact with the stock of Type 317 low carbon stainless steel. Chlorine can be added either at the pre-mixer or directly to the bottom of the tower.

Stock is diluted in the tower overflow launder and flows by gravity to the Cl_2 stage washer. Vat dilution is added in the launder and is varied by means of an American Blower Gyrol variable speed fluid coupling on the dilution pump. Dilution water is from the first ClO_2 stage seal box. The Cl_2 stage washer is constructed entirely of Type 316 stainless steel, except for the Type 317 deck winding wire. All the Sherbrooke Machineries bleach washers are equipped with a rubber covered steel press roll, an oscillating wire cleaning shower, two washing showers, a double roll take-off and a shredder conveyor.

At the No. 1 washer repulper 5% caustic is added and the stock drops into a Kamyr double shaft mixer of type 316 S.S. construction where steam is added to maintain the tower temperature. From the mixer the stock drops into the first caustic downflow tower. The tower is 17 ft. diameter and 58 ft. high, constructed of a steel shell with a 3 in. total thickness Hedtile lining. At the bottom of the tower are two Kamyr CT-4 agitators of Type 316 S.S. and six Kamyr dilution nozzles also of 316 S.S. Diluted stock from the bottom of the tower is pumped to the first caustic washer by means of a Kamyr stock pump. The washer dilution is added to the stock before the vat inlet header. Flow is varied by remote control of a Gyrol fluid coupling.

Stock from the first caustic washer drops into a Kamyr single shaft mixer of type 316 S.S. construction where the necessary steam is added. From



Ground Floor of New Bleach Plant . . .

Fresh water pumps on left, Kennedy stock pumps with American Blower Gyrol drives on right are bottom of bleach towers. More stainless steel than usual is here.

the mixer the stock drops into a Kamyr rotary air-pressure feeder of heavy cast iron construction which has a variable speed chain drive from a Dynamatic coupling. Steam and compressed air are admitted in the chamber below the feeder and force the stock down the feed leg and up through the first ClO_2 tower. The air admitted is controlled automatically to maintain a constant stock level just below the feeder.

As the pulp enters the bottom of the tower chlorine dioxide solution is added and the pulp and chemicals are mixed by a Kamyr RM-5 radial flow mixer. All parts of the mixer in contact with the stock and ClO_2 are of Hastelloy C. The top of the tower has a spray ring, scraper mechanism, a launder similar to that on the chlorination tower. The tower is 17 ft. 8 in. O.D. x 50 ft. high constructed of a steel shell and an acid resistant brick lining.

Buffer caustic is added to the spray ring to adjust the pH of the stock leaving the tower which is further diluted in the launder before being pumped to the washer. A valve in the pump discharge is automatically regulated to maintain a constant level in the discharge launder. Additional dilution water is added in the line before the washer, being controlled by the setting of the American Blower Gyrol fluid coupling in the dilution pump. Parts of ClO_2 washers in contact with stock and filtrate are of Type 317 S.S. rather than Type 316.

Caustic for the second caustic stage is added in the repulper of the first ClO_2 washer. The second caustic tower, auxiliary equipment, and washer are identical to those of the first caustic stage. Stock from the second caustic stage enters the second ClO_2 stage which is identical to the first ClO_2 stage with the exception that the tower is higher—80 ft. This gives additional retention time and further allows gravity flow to the last washer with all dilution being done in the tower launder.

Stock from the fifth washer drops into a single shaft Kamyr mixer where SO_2 solution is added and the stock falls into the high density storage tower, which is similar in all respects to the two caustic towers. Stock is pumped from the bottom of the tower through a DeZurik regulator to the bleach screening system.

Practically all stock, white water, fresh water and liquor piping in the bleach and washer buildings is type 316 stainless steel. The tower ventilation ductwork and chlorine washer hood are of glass reinforced polyester resin material.

2. Chemical Preparation . . .

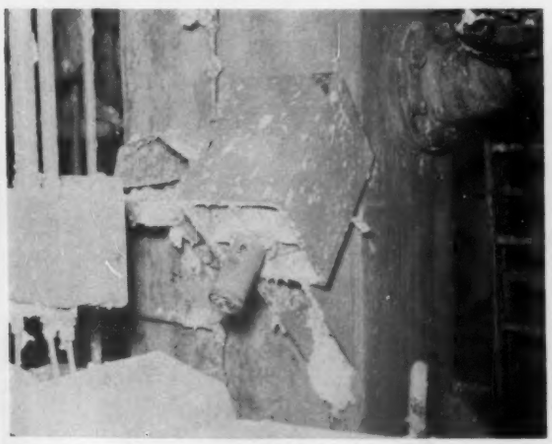
. . . new plastic and glass piping is one of most interesting features of this addition . . .

All chemicals arrive here by tank car. Five tracks—two for chlorine, two for sulfur dioxide and one for sulfuric acid—are outside. The chlorine and SO_2 are used directly from tank cars, with one standby at all times. Chlorate and caustic unloading is inside.

Chlorine for the first bleach stage is unloaded by padding air from a Worthington carbon ring compressor. This air passes through a Pittsburgh Lectrodryer and filter to provide necessary moisture-free air. The chlorine is vaporized in either of twin vaporizers, metered and controlled through Fischer & Porter Rotameters and Foxboro valves and piped directly to the chlorination tower.

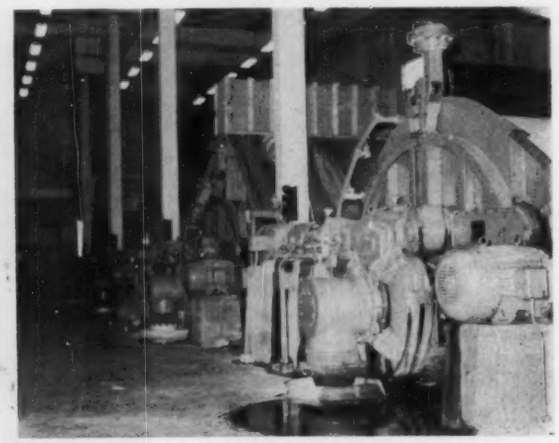
Caustic soda for second and fourth bleach stages is supplied in tank cars as a 73% solution and unloaded by an all nickel pump through an automatic diluting and cooling system into three 50% caustic storage tanks, each of 15,490 gals. capacity. From here caustic is pumped through a heater and automatic dilution station to a 4% caustic storage tank, which has 1,600 gals. capacity, then to the bleach plant.

Sulfur dioxide is used in chlorine dioxide preparation and also in the storage tower in the bleach plant. SO_2 from tank cars is unloaded, using the same padding air supply as for the Cl_2 unloading and passes through a vaporizer. Gaseous SO_2 from the vaporizer is taken through filters and



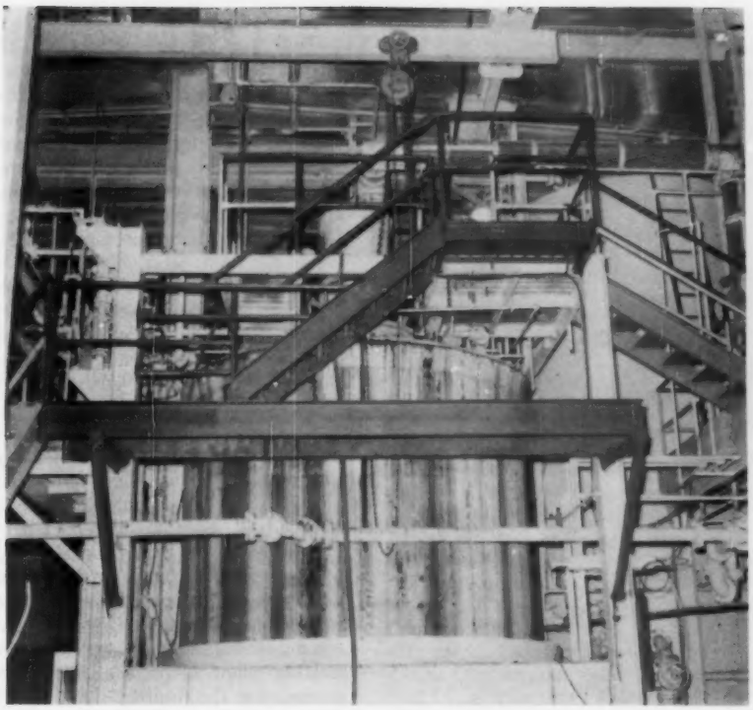
Atomic Age Brings New Gadget . . .

. . . to Dryden bleach plant in this Isotopes Products Ltd. cobalt 60 level gauge which counts gamma rays, thereby controlling level of star feed to chlorine dioxide stage. . . . Replaces a mechanical control which used to plug up. Nothing here can plug. This was recommended by Kamyr; first used in Southern U.S.A.



Second Washer is Chlorine Dioxide Stage . . .

. . . one of two such stages, distinguished because they have wooden hoods over Sherbrooke washers. Vats are tile jobs by Stebbins. Dynamatic Corp. eddy current couplings on each washer are used instead of d.c. motor drive which involved separate motor generator set. There is no direct connection from one side of coupling to another; operators say it is simpler and cheaper.



One of Biggest Chlorine Dioxide Generators . . .

. . . dominates new chemical plant, which is important addition in a mill using ClO_2 bleach stages. This is twice as big as most ClO_2 generators, making 6 tons a day by Olin Mathieson process.

mixed with compressed air for use in the ClO_2 generator. A second connection puts SO_2 gas through a tile absorption tower. Cold water is admitted to the top and resulting SO_2 solution flows by gravity directly to a polyvinyl lined tank beneath the tower. Here it is pumped directly to the mixer in the bleach plant.

For the ClO_2 Olin Mathieson type generating plant, sodium chlorate is received in flake form in tank cars and unloaded by circulating water. The 46% solution is pumped over to storage and then to a lead-lined generator of about 4,300 gals. capacity. An air and SO_2 mixture is bubbled through a solution of sodium chlorate and sulfuric acid. This mixture enters the generator through six 18 in. tile draft tubes at the bottom of which are Al-oxide carborundum flat discs. Air is supplied at 10 psi from a blower and the air and SO_2 mixture automatically proportioned. The generator is equipped with two explosion lids.

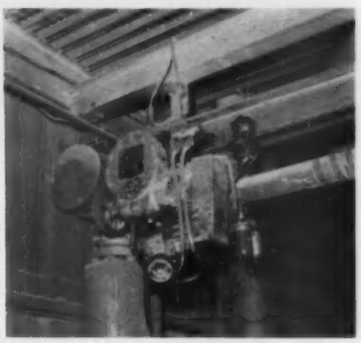
The H_2SO_4 is pumped from the storage tank outside to a head tank above the generator and enters the generator through a lead-line extending below the surface of the liquor. Generated ClO_2 is carried up into the scrubber over the generator gas outlet. The scrubber is designed to remove any chlorine that may be present in the exit gas and return it to the generator. The absorbing liquid in the scrubber is the chlorate solution entering the generator from the head tank.

From the scrubber the ClO_2 air mixture travels through pyrex pipe to the two packed tile absorption towers where the ClO_2 is absorbed in cold water and is collected in a polyvinyl chloride lined primary tank below absorption towers. A Carrier water refrigeration unit is installed to provide necessary cold absorbing water for summer operation. The whole system is kept under a slight vacuum by a steam ejector on the absorption tower gas outlet. The ClO_2 solution is pumped to two 2,000 cu. ft. PVC lined storage tanks from where it is pumped to the ClO_2 towers in the bleach plant.

Effluent from the primary generator overflows to a secondary lead-lined generator containing one draft tube through which air and SO_2 are added. Effluent from the secondary generator overflows to an air stripper before going to sewer. All generator liquor and effluent piping is lead. Polyvinyl chloride pipe is used for sample lines and saran lined pipe for ClO_2 solution

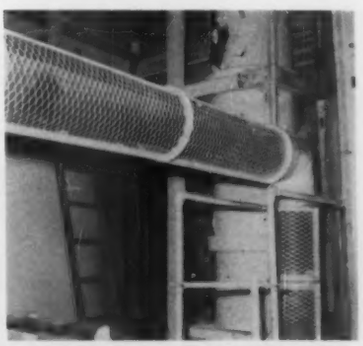
DRYDEN

lines. All instrument air lines are of Dekoron tubing, a polyethylene tube with a PVC jacket, both in chemical preparation and bleach plants, instead of copper tubing which could not resist the corrosive atmosphere. Process Instruments, Toronto, supplied Dekoron and polyvinyl chloride pipe. Pyrex piping, protected in wire mesh, is used for ClO_2 gases.



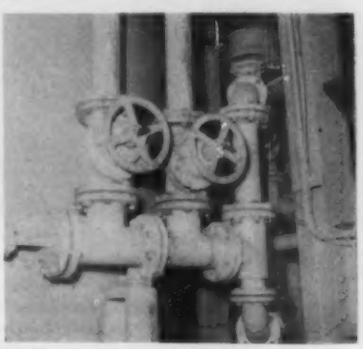
Porcelain Valve—Lead Pipe . . .

. . . to handle liquor in ClO_2 generator from which chlorine dioxide comes off.



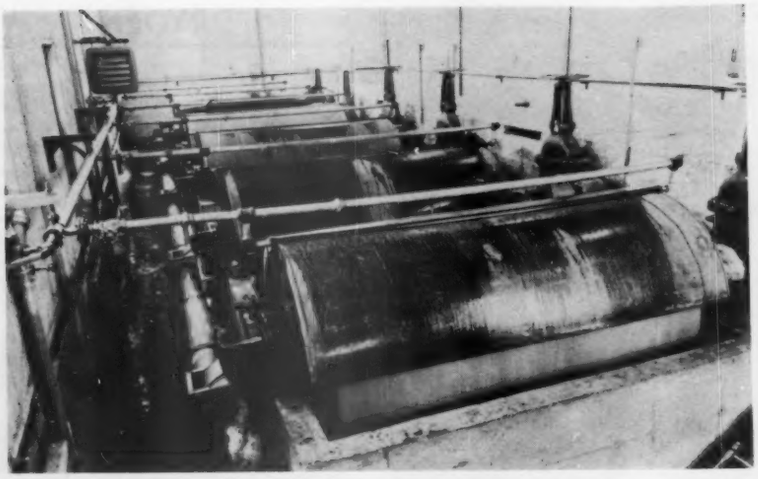
Special Pyrex Piping . . .

. . . protected in wire mesh for ClO_2 gases.



And Saran Lined Pipe . . .

. . . and valves (FL-85) for handling ClO_2 solutions.



Simple but Efficient . . .

. . . these Green Bay North rotary filters with fine wire cover, six in all, do a satisfactory job handling the water from Wabigoon Lake. . . .

3. Water Filtration . . .

. . . Unusual conditions make seemingly poor water quality okay for a simple treatment . . .

Water supply is from the Wabigoon River, which is the outlet of nearby Wabigoon Lake, a dandy fishing lake, by the way.

Dryden is able to use a much simpler and less expensive treatment plant than is often the case in mills making such pulp—a Green Bay Foundry Co. North filters system. More bleaching chemicals are used in summer to get pulp brightness.

Two new Byron Jackson No. 36 RXM vertical water pumps, each rated at 15,000 gpm at 90 ft. total head were installed to supply additional water needed for the bleach plant. The pumps are protected by coarse screens and the discharges are cross connected on two underground 24 in. C.I. lines which run over to the new water filtration plant.

This plant houses six 5 ft. diameter by 10 ft. long North very fine rotary water filters equipped with 150 mesh S.S. cover wires. Each is driven through 68 rpm Falk gears through 3 hp Westinghouse motors and has Jenkins Bros. gate valves. The water lines from the pumphouse discharge into a flume feeding these filters and filtered water drops into a concrete storage tank beneath, with a big Chapman valve on the outlet. Level in the tank is controlled by an Askania hydraulic regulator operating two 24 in. Continental butterfly valves in the incoming lines. A place for a water treating plant is provided if found necessary in the future.

Main water supply for the bleach plant flows by gravity through a 24 in. C.I. line. A separate 18 in. line provides the last stage bleach seal box. This separate line was installed so that, if necessary later, treated water could be supplied to the last bleach stage.

Photo by Malak

Centrally Controlled—a 320 Ft. Long Woodroom . . .

Three of four Fibre Making Processes Inc.-design barkers, built in Canada by Horton Steel Works, are already in position. These are 12 ft. diameter by 45 ft. long 2-section "M" bar drums carried on manganese chains and cast iron traction wheels. Drive chains are of standard steel with manganese sprockets. Each drum is V-belt driven and concrete vats are designed so they may be used for wet, or future dry barking. Logs discharge on a 72 in. Goodyear belt. Central controls for this entire room are now on platform at far right (see picture, upper right).

TV Shows Operation 80 ft. Above Him . . .

Here is platform with central controls for whole room and Westinghouse TV set showing chips being fed into top of bins. This equipment was not yet installed on platform shown in picture of woodroom. Here are stop-start buttons and indicating lights for control of Jeffrey conveyor bringing wood into this plant and all operations inside. Plows are remotely controlled hydraulically, rather than by manual arrangement.

4. Wood Preparation . . .

. . . capacity for wood handling and preparation is doubled but automation reduces manpower needs about 65% . . .

Bob Chambers, Anglo's assistant chief engineer in Quebec City, designed the control system for the big new woodroom, illustrated and described in the accompanying pictures. One chipperman runs the console shown in the picture. The plant has a foreman, two sorters and an oiler. That is the entire staff—only one-third of what was required to operate the older and much smaller woodroom.

A new jackladder and slasher for river-driven wood from the south and two new slashers for truck-hauled wood from the north reduce the delivered 8 ft. wood to 4 ft. The 649 ft. long Jeffrey cable conveyor to the woodroom has a 1¼ in. cable and design capacity is 120 cords per hour. Dominion Bridge supplied steel work for this conveyor.

The conveyor is in the form of a figure eight so wood from the slashers starts on the bottom strand and ends on the top strand in the woodroom. Barked wood from the drums can be returned to the bottom strand in the woodroom and is carried away from the woodroom and discharged on the 304 ft. long triple-strand stacking conveyor.

Jeffrey Manufacturing supplied the stacking conveyor and all conveyors in the woodroom, together with the steel work for all these conveyors.

This stacking conveyor discharges on to a 600 ft. long cable conveyor of timber construction. This conveyor is about 40 ft. high and has three discharge points on either side for piling with portable stacking conveyor. Wood is reclaimed on the bottom strand and discharges onto a two strand chain conveyor which delivers wood to the barking drum feed conveyor, a 60 in. wide Goodyear flat belt conveyor, 156 ft. long, running at 200 fpm.

The four Fibre Making Processes-design, Horton-built barkers, described with the picture, discharge onto a 72 in. wide, flat, 199 ft. long belt sorting conveyor. This conveyor can be reversed and wood from the drums goes onto the return strand of the cable conveyor from slashers and to the block pile. When going in the forward direction, wood from the first two drums may be plowed off to a 36 in. belt conveyor running in the opposite direction and returned to the block pile. Alternatively, wood from all the drums can proceed to the sorting point where incompletely barked wood is thrown onto a 30 in. belt conveyor which discharges onto the incoming strand of the cable conveyor from slashers to be recirculated in the drums.

A fifth barker is being added now at Dryden and there is space for a sixth.

Properly barked wood discharges via split chute to two Carthage chippers, one an 88 in. 10-knife unit from the old woodroom, the other a 96 in. helical-type 12-knife machine. They run at 327 and 360 rpm respectively, with 300 and 600 hp motors. Both discharge onto a 42 in. belt, with capacity for 38,400 cu. ft. of chips per hour at 450 rpm, then via bucket elevator and scraper conveyor to four Dillon chip screens, each 72 in. wide and 14 ft. long, with three screening decks. Oversize chips go to a rechipper.

The accepted chip conveyor runs at 460 fpm and discharges into 80 ft. high bucket elevator which has a 54 in. belt. This discharges onto a 42 in. belt in a penthouse on the chip bin roof, which in turn discharges onto a 42 in. troughed shuttle belt conveyor which distributes the chips into the chip bin which has 100,000 cu. ft. capacity.

Dryden formerly conveyed chips straight to a chip bin over the old digesters, putting all deadweight at top of the building. Now the practice is to put chips at ground level and convey to digesters as needed.

DRYDEN

Another Operation Controlled Via Another TV Set . . .

Williams & Wilson Ltd. screw unloader for chips from storage bins, starting them on way to digesters. A TV set on digester operating floor tells operator there what is happening here, and he can act accordingly.

Chips are withdrawn from the bin by a Williams & Wilson traveling reversing turn screw feeder discharging onto a 42 in. belt running at 400 fpm which discharges onto an 800 ft. long, 42 in. inclined, enclosed outside conveyor to the top of the digesters. Chips discharge onto a reversing 42 in. inclined belt conveyor and then onto a distributing scraper conveyor over the chip bin above the old digesters. The lower end of the inclined conveyor discharges onto a 42 in. Jeffrey shuttle belt unloader which charges chips directly into the new digesters.

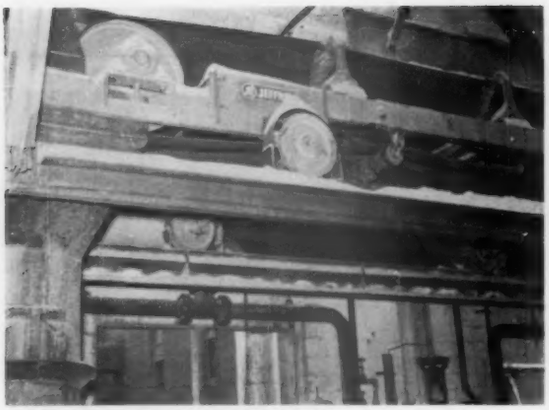
5. Digesters . . .

. . . mild welded steel used for 4 digesters, equipped with Esco circulation and plate type heaters . . .

Each new digester is of welded steel construction 11 ft. inside diameter by 54 ft. 8 in. face to face of nozzles with a volume of 4,500 cu. ft. They are fabricated of 1⅝ in. thick plate throughout by Dominion Bridge Co. Ltd. Insulation is with 1½ in. foamglass blacks. Each circulating system consists of an Esco circulating ring at the med point of the digester piped to a 10x12 in. Class "CSA" Buffalo circulating pump discharging through a Swedish Ramen laminated slate type heater of 304 S.S. construction.

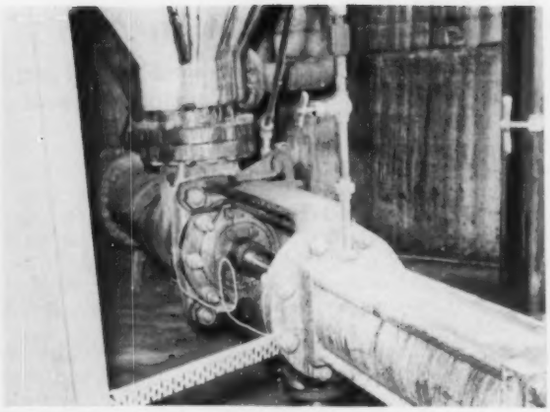
Dryden men say it does not have same cleaning problem as a tubular heater. Higher liquor velocities across the plates and narrow passages are credited with reducing scaling problems. Discharge of the heat exchanger is piped to the top and bottom of the digester with a flow measuring orifice in each line.

Besides the Yarway blow valves shown, additional digester filling pumps were supplied by William Ken-



Jeffrey Shuttle Chip Unloader . . .

. . . serves Digesters 9, 10, 11 and 12—the four new ones—traveling on 42 in. belt. Storing chips at ground level and conveying to digesters eliminates deadweight at top of building.



Hydraulically Operated Blow Valve . . .

. . . one of new 10 in. Yarway Type A blow valves serving new Dryden digesters.

nedy & Sons. Controls are by Taylor Instrument Cos.

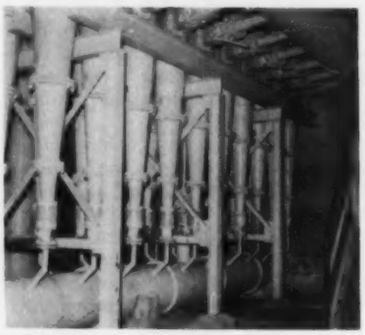
The new digesters connect through a common blow header to a new blow tank by Horton Steel Works, 24 ft. by 63 ft. 6 in. overall. This is equipped with a Sherbrooke Machineries 2-propeller adjustable pitch agitator at the bottom. The tank is enclosed in concrete blocks and insulated with foamglass. Stock is withdrawn through a Stearns magnetic separator by a Kamyr stock pump and pumped to the washer building.

6. Washing-Screening . . .

. . . impressive building, neat layout and spacious. Centri-Cleaners used before and after bleaching . . .

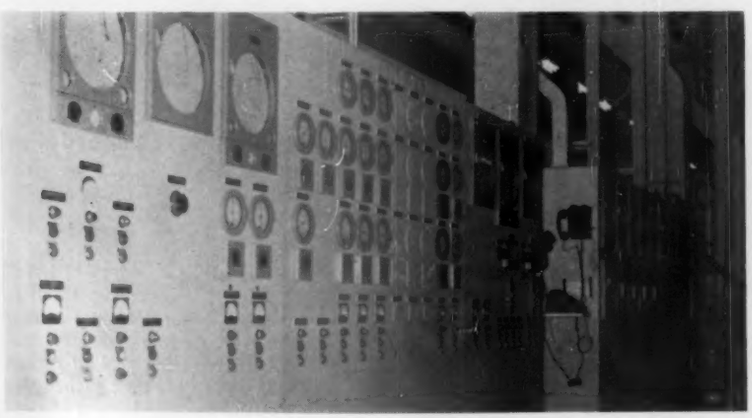
A 3-story building 156 ft. long by 75 ft. wide by 76 ft. high houses a 4-stage brown stock washing system and unbleached and bleached stock screening systems. All controls are handy at a central point on the top operating floor.

An Oliver vacuum washing installa-



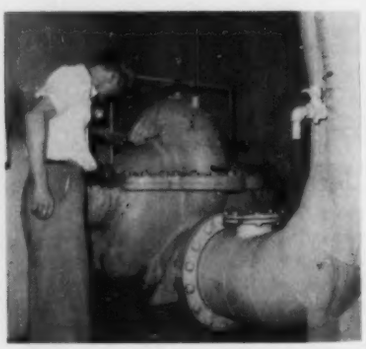
Centri-Cleaning of Dryden Pulp . . .

. . . follows screening and also bleaching. Here are 24 Bauer Centri-Cleaners and there are two other secondary screens serving bleached stock.



All Controls are Here . . .

At left, screen room control board, next the washer control board—then just beyond is board for bleach pulp deckers and Centri-Cleaners . . . all in line and together and all by Minneapolis Honeywell.



Allis-Chalmers Pump Serves Them . . .

This large pump supplies stock to the Centri-Cleaning battery.

tion of 350 tons capacity was made rather than the diffuser type washing already in use in the mill.

Three Bird-type Jonsson knotters, and four 11 ft. 6 in. by 16 ft. Oliver brownstock washers with shredder repulpers, and liquor and foam tanks make up principal equipment. Knotters and washers are enclosed in a Ross Engineering hood and two 15,000 cfm fans remove the hot air and vapors.

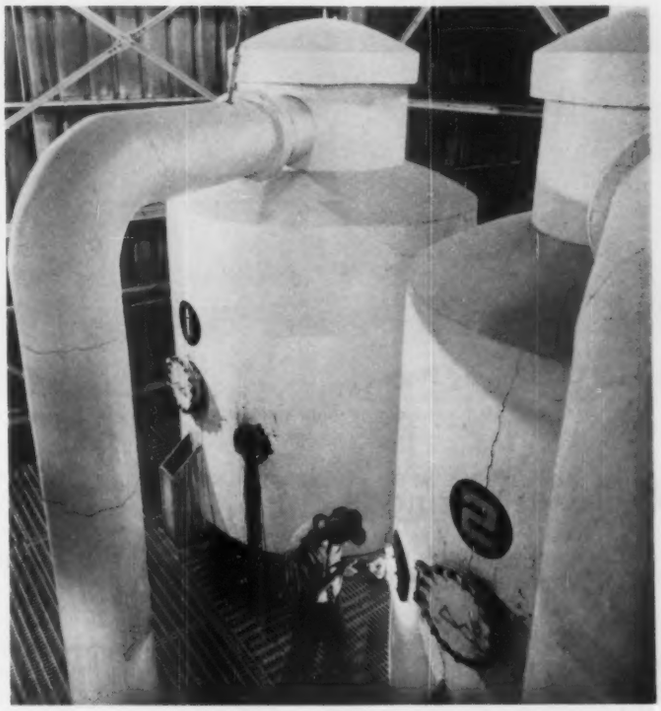
Washers are on the top floor alongside control panels and the liquor drop legs drop down to seal boxes in the liquor tanks on the bottom floor. Foam passes through a common header to the 21 ft. 6 in. by 50 ft. high foam tank which vents through an Oliver foam breaker to sewer and liquor is pumped to the furnace feed. Dilution and shower liquor are pumped from liquor tanks countercurrently to the stock with strong black liquor being withdrawn to evaporators from first stage service tank.

Washers are driven through Dynamatic couplings and Falk reducers which replaced a dc motor drive which involved separate motor generator set. Cheaper and simpler, say operators. There is no direct connection from one side of a coupling to another—variation in speed is via a magnetic field.

Diluted stock from the fourth washer repulper flows through a DeZurik consistency regulator to a small holding tank agitated by a Lightnin mixer. Stock is pumped by a Kamyr pump to four primary Mark A Cowan screens and one secondary screen on the top floor. Primary screens have 0.085 in. perforated plates and the secondary 0.065 in. The stock is then pumped through two stages of model 600 Bauer Centri-Cleaners and thickened on an Oliver valveless decker, and Sherbrooke Impco-type thickener on the second floor. Stock goes to a 25-ton unbleached blending chest tile lined by Canadian Stebbins, on the bottom floor, and then to the bleach plant.

Bleached stock screening through two stages of model 623 Bauer Centri-Cleaners also takes place here. And this stock goes over a Sherbrooke thickener. All chests were tile lined by Stebbins.

DRYDEN



Swedish Evaporator is 6-Body . . . Photo by Malak

A Ramens evaporator supplied by Sandvik Canadian Ltd., designed to evaporate 4,260,000 lbs. per day of 185° F. ingoing liquor at 16% total solids, with 57% solids outgoing. First two effects have stainless steel tubes and last four have steel. Effects 4, 3, 2 and 1 have Ramens laminated preheaters.

7. Recovery and Power . . .

. . . new steam generating was needed . . . a B & W unit provided it, and Swedish type evaporators were added . . .

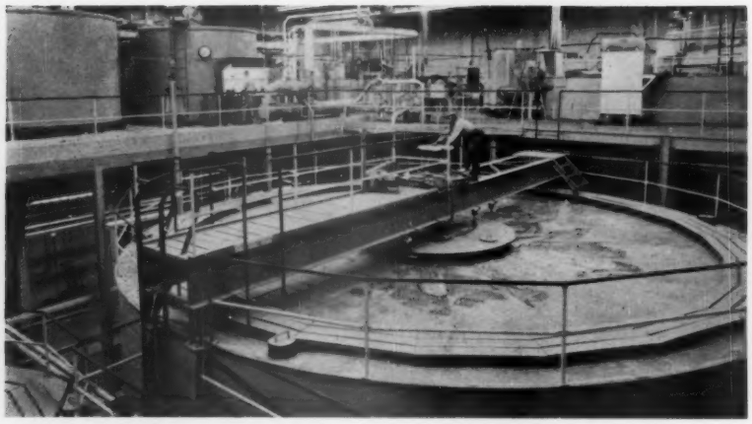
A Combustion Engineering recovery boiler installed three years ago, rated at 200 tons, and another older one, were sufficient for new production. Additional steam generating capacity is provided by a 150,000 lb. per hour Babcock & Wilcox unit adjacent to an existing lignite boiler.

The output of the new unit is rated at 150,000 lbs. per hour continuously when burning lignite. Air-swept wood spouts for feeding bark to the furnace are supplied for future bark burning. When burning 10,000 bone-dry lbs. of bark in combination with lignite, the unit will generate 125,000 lbs. per hour continuously. The unit will be suitable and provision will be made in one furnace wall for the future installation of oil or natural gas firing equipment. Design pressure of the unit is 700 lbs. per sq. in. The steam pressure at superheater outlet will be 625 psig at 725° F. when using 30% excess air.

The unit consists of the two drum Stirling builder with water cooled furnace, superheater, economizer, tubular air heater, Diamond sootblowers, Babcock-Detroit Rotograte spreader stoker with cinder return system, forced and induced draft fans, dust collector and necessary ducts.

A new DeLaval Type 6KS 6/4 multi-stage centrifugal boiler feed pump is being installed. The forced draft fan is a Sturtevant #105 Turbovance fan. The induced draft fan is manufactured by James Howden & Co. The instrument panel is by Bailey Meter Co. A new steel stack 7 ft. in diameter by 35 ft. 9 in. high by Dominion Bridge is installed on the building roof.

The new Ramens evaporator is adjacent to the existing recovery building, housed in a steel frame building 50 ft. by 70 ft. by 60 ft. high, designed to carry a future electrostatic precipitator on the roof.



Dorrco Causticizing Plant . . .

. . . is sized for 500 tons a day of pulp production. This view is across the mud clarifier.

8. Causticizing . . .

. . . entirely new plant built big, for future expansion is supplied by Dorr-Oliver equipment . . .

From smelt dissolving tanks at the recovery furnaces, green liquor is pumped to a surge tank outside the new causticizing building. From here liquor goes to a Dorr single compartment green liquor clarifier, 40 ft. diameter by 15 ft. 10 in. side depth. Clarified liquor is pumped to outside green liquor storage, then to a Dorrco #10 stainless steel lime slaker.

Lime is delivered from rail cars through a Dracco pneumatic conveying system. The slaker is on an elevated floor above causticizers which are on the main mezzanine floor, which gives gravity flow from the slaker to the causticizers and to white liquor clarifier on the main floor. There are three Dorrco #15 causticizers brick lined by Stebbins.

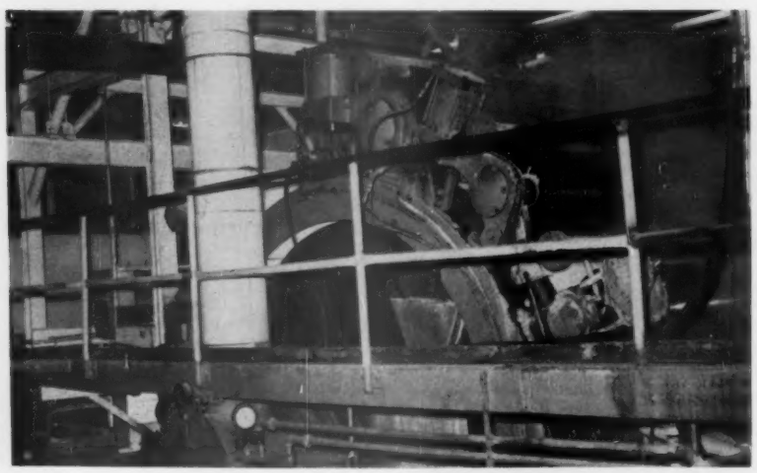
White liquor flows to a Dorr 4-compartment balanced tray white liquor clarifier 35 ft. diameter by 25 ft. deep. Overflowing white liquor is pumped to storage tanks. The rotating assembly is equipped with a motorized lifting device and torque recorder. The mud from the white liquor clarifier is washed in the Dorr 4-compartment 2-stage lime mud washer which is 35 ft. diameter by 25 ft. deep, also equipped with a similar lifting device and recorder. Weak liquor from here is pumped to storage for dilution in smelt dissolvers.

Lime mud at 33% solids goes to storage, then to an Oliver mud filter equipped with repulper, vacuum receiver, moisture trap and Nash L-8 vacuum pump. Filtered mud at 55% solids is discharged to sewer pending installation of a kiln. Filtrate is returned to the lime mud washer.

Dregs from the green liquor clarifier are pumped to a hot water mixing tank which overflows to a single compartment type "A" dregs washer. Washed dregs go to sewer and weak liquor to the second stage of the mud washer. All tanks are insulated with foamglass block. All liquor piping is of fabricated Type 316 stainless. Instrumentation is by Minneapolis-Honeywell.

9. Machine Room and Finishing . . .

. . . a different type pulp sheet former and extensive automatic finishing equipment are selected . . .



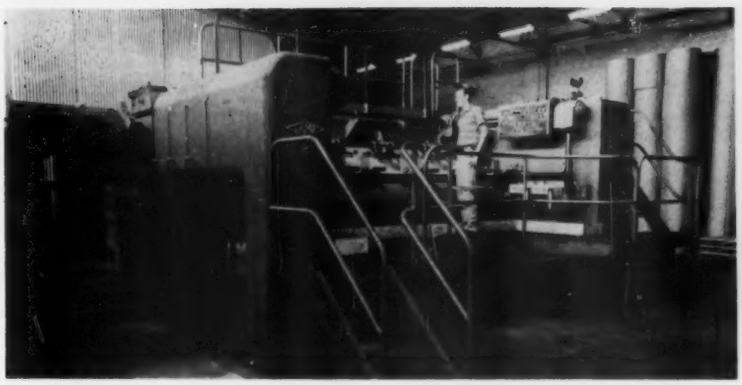
New Oliver Sheet Former . . .

. . . on No. 1 pulp machine at Dryden, 11½ ft. diameter with 131 in. face. Features: All stainless steel; segmented plug type valve at center of cylinder; drainage channels slope from edges to center to improve drainage; instead of a wire winding on top of division strips, it has solid steel perforated deck, all designed to withstand pressures of up to 300 lbs. per lineal in. of roll pressure.

To provide necessary capacity for 350 tons of bleached pulp, it was decided to completely rebuild No. 1 machine, which was at that time producing 75 tons of unbleached pulp. It consisted of two cylinders, felts, suction boxes, baby presses and first, second and third main presses, dryers, cutter, cutter boxes and 500 ton baling press.

The new machine consists of the Oliver vacuum cylinder sheet former (picture shown), a baby press, first press, predryers, second press, smoothing press, 14 additional dryers, the original 42 in. dryers, 45 additional dry end dryers, new Lamb Grays Harbor cutter layboy (picture) and bale handling equipment including new Baldwin 800 ton press, new dryer hood and vapor absorption system, new broke handling equipment and completely new drive.

The 131 in. face sheet former was selected instead of Fourdrinier to get bigger production per inch of width. Dryden operators expect less down-



Automatic Pulp Cutting and Laying . . .

. . . with this heavy duty Lamb Grays Harbor machine (at left) cutting four 33 by 33 in. pulp sheets. It has continuous automatic side discharge layboy, a receiving station long enough to receive full layboy load of stacks, and other Lamb automatic bale handling and finishing equipment.
Bale of Dryden Pulp almost ready to ship (at right). Ovalstrapping tying machine follows 800 ton Baldwin baling press with airfloat press plates, and before that in the Lamb finishing system are a power swing table, storage belt for wrapper pickup section, and Toledo scale with airfloat scale plate. At end of line, after this tying section, are bale elevator-stacker and stack storage unit with end pickup and sufficient storage for 12 stacks.

time and changing wires and, as a result of less moving parts, less maintenance. They agree they will not get very uniform sheet thickness, as is achieved on a Fourdrinier, especially for dissolving grades. Vacuum requirements are handled by a Nash H-11A vacuum pump.

The baby press after the sheet former was constructed from two of the rubber press rolls from the old machine felt presses. The two Kamyr H-800 main presses are being designed for 1,800 lbs./in. pressure and 3,000 lbs./in. and are fully equipped with anti-friction bearings.

Between these two presses is located the pre-dryer consisting of five 48 in. diameter dryers. The smoothing press was made of two main press rolls from the old machine. The bottom roll is rubber covered and the top cast iron. This press flattens out grooves for better surface contact in dryers.

The first dryer section consists of 14 new Pascol 48 in. dryers and second and third sections are original dryers. The next two sections consist of forty-five 48 in. diameter Paper Machinery Ltd. dryers stacked three high. The last five dryers are piped with cold water rather than steam to cool the sheet and prevent brightness reversion.

The Lamb Grays Harbor pulp cuting, laying and finishing system, as illustrated, is largely an automatic contact switch system.

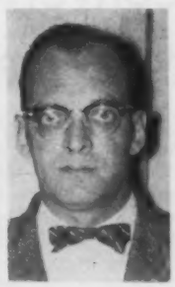
A complete new Ross Hooper enclosed hood was installed over the five dryer sections, and Dryden operators told PULP & PAPER it gives more uniformity across the sheet and saves steam by being closed. The open hood over the old dryers was replaced but the exhaust fans and economizers were retained. The Ross vapor absorption system on existing dryers was retained and additional capacity installed for new sections. A feature of this system is that standard v.a. pipes were installed in the air pockets around the two top rows of dryers but on the bottom row Dryjector nozzles were used which blow air in from either side. A small hood and exhaust fan are over the pre-dryers.

A completely new General Electric multiple generator sectional machine drive with electronic amplidyne control, consists of 11 sections with d.c. motors, factory mounted pilot generators and Dominion gear reducers. Two multi-unit main power generator sets, each driven by a 200 hp/a.c. motor, supply power to the sections. A master operating panel from which speed of the whole machine may be varied is on the front side, with individual panels for separate sectional speeds. Machine speed range is 80 and 220 fpm. Instrumentation is by Foxboro.

Power is obtained from a new 1,000 kva Westinghouse power center with dry type transformers reducing incoming voltage from 13,000 to 550.

A new E. D. Jones Lieback disintegrator is in a tile-lined vat below the smoothing press before the dryers. It consists of a horizontal shaft mounted by four 33 in. diameter impellers, driven through a V-belt drive by a 150 hp motor. This beater is fed from the wet end by an aluminum channel conveyor (instead of usual wood slats to avoid splinters in stock).

An additional 20,000 sq. ft. of storage space is provided for the new Dryden pulp. Three cars can be simultaneously loaded directly from this finishing room. The train shed was extended to allow for 16 cars to be loaded under cover. A 20,000 lb. capacity hydraulically operated Joyce cross-over bridge allows fork trucks to pass over the track well.



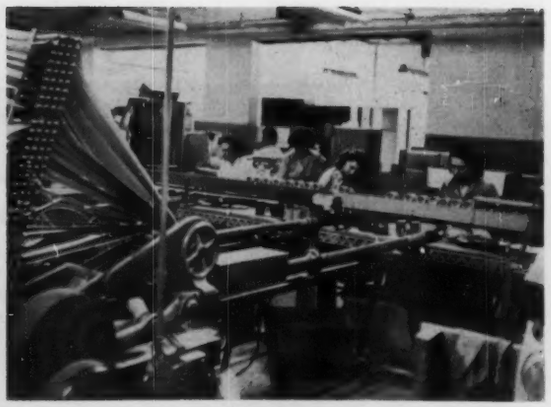
Berg-Johannessen . . . . . Nielsen

Dryden Promotes Two . . .

PER BERG-JOHANNESSEN, asst. pulp mill supt., Dryden Paper Co., Dryden, Ont., was appointed bleach plant supt. Norway-born, Mr. Berg-Johannessen graduated from U. of Toronto, joined Dryden in 1952.

KENNETH E. NIELSEN was named gen. logging supt. for Dryden, according to Woods Mgr. Norman McMillan. Other appointments are G. K. Seed as asst. gen. supt. and W. F. Beatty as asst. district supt.

New Conveyor Line
Packing is made easier as cups flow smoothly to packing tables.



Cups Move to Packing Tables
Girls prepare cups for shipping.

New Baking Cup Machines
Punching out 10 to 20 cups at a clip, pleated cups are cut and formed in a single operation.

Streamlined Handling
Outside consultant FRED SHERRIFF and Harvey Factory Supervisor GLEN HARKER discuss new handling methods.

Converting Plant Has New Look

Harvey Paper Products Co. keeps up with the times

ROBERT BLACK, Manager of Harvey Paper Products Co.

• What makes a company grow? One answer is the ability to change. "When you're through changing, you're through," is the message on a recent KVP Co. calendar. KVP's Harvey Paper Products plant at Sturgis, Mich., is a good example of an operation that's changing in the right direction—for the better. Keeping abreast of modern trends in the paper converting field has brought many improvements in equipment and plant layout.

For example, in the manufacture of baking cups, Harvey's new machines cut and form the cups in a single step. Fed by 10 to 20 narrow paper rolls instead of flat sheets, they stamp out cups with machine-gun rapidity. Automatic packaging machines quickly fill and seal the six-sided baking cup packages.

Then there is a press with a fixed die that cuts place mats with twice the ease of the old hand-placed die presses. The mats look and feel like linen—an effect created by passing the paper web between rollers imprinted with the linen pattern.

Factory Manager John Wallman says that most of the machines have been created by Harvey's own technicians. The dies are all home-made in a sense, tailored to fit each customer's individual needs.

Some modern ideas in stock handling have also been put into practice at Sturgis. Materials are routed in a continuous flow, moving in proper sequence from operation to operation with as little handling as possible.

KVP's annual sales meetings help keep selling methods up-to-date, too. Field salesmen come to the main offices at the paper mill in Parchment, Mich., from widely scattered sections of 25 states. They discuss sales problems, learn new ways of selling, become familiar with new products. The agenda includes a visit to Sturgis to see for themselves how the Harvey plant produces the bakery, hotel and restaurant paper specialties that are made there.

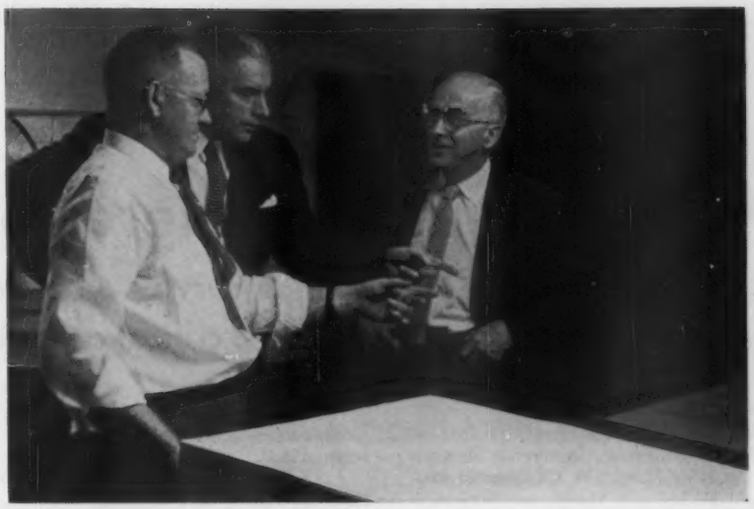
History

The interesting pictures from Harvey Paper Products operations with this story were provided by KVP Log.

Harvey Paper Products Co. became a subsidiary of KVP in 1943, 34 years after Kalamazoo Vegetable Parchment Co. was incorporated. Starting as a small rag waterleaf converting plant, the parent company soon added printing presses, an ink-making department, a staff of artists and a waxing department. In 1918 a new mill equipped for two paper machines was built; by the 30's, four more paper machines had been added. While the firm grew, its name was shortened to The KVP Co.

The first step to obtain converting facilities outside the Midwest was taken in 1938 with the establishment of The KVP Co. of Texas at Houston. In 1939 the company acquired a converting plant in Philadelphia (later moved to Devon, Pa.) and, in 1943, a pulp and paper mill at Espanola, Ont. They also bought cutting rights on a 5,600-square-mile timber concession in northern Ontario. Appleford Paper Products Ltd., with plants at Hamilton, Ont., and Montreal, Que., joined the official KVP family in 1945.

From the time when Harry Zimmerman and Jacob Kindleberger founded the company, it has had leadership of exceptional ability. Today President Dwight L. Stocker of KVP is guiding an extensive program of modernization and expansion that paves the way for a bright future.



Salesmen Discuss Place Mat Production

PAUL WELSH, center, and JOHN SCHLICK, right, confer with Factory Manager JOHN WALLMAN.

CARTER WATSON, technical director, in one of Puget Pulp's new lab rooms equipped with indirect fluorescent luminous-panel lighting.

Laboratory Expanded 1200% in 20 Years

Recent laboratory expansion at Puget Sound Pulp & Timber Co. brings the total area devoted to development and testing work to over 19,000 sq. ft., as compared with only 1,500 sq. ft. 20 years ago. The newest addition increases the area some 6,600 ft. over space used for the past nine years, and, with installed facilities, effectively broadens the scope of research activities. The original lab has been enlarged nearly 1200 per cent in floor area during the past 20 years.

A plotted curve depicting growth of Puget Sound Pulp's lab since 1937 would have profile characteristics somewhat paralleling the company's continuous and increasing concern in developing new products from pulp residues—alcohol, paperboard and chemicals.

The recent addition, Gen. Supt. E. O. Ericsson points out, includes new rooms for analytical and cellulose research, darkroom for photomicroscopy, and increased size of the instrument shop 50 per cent. Dr. E. Gray King is research director and Carter Watson is technical director.

Canada's First Titanium Pigment Plant Operates

Canada's first titanium pigment plant, at Varennes, Quebec, built by a National Lead Co. subsidiary, Canadian Titanium Pigments Ltd., has started operations.

Most titanium pigments consumed in Canada have for many years been imported from the United States.

The new plant will make Canada virtually self-sufficient in titanium pigments, says Pres. Joseph A. Martino of National Lead Co.

Titanium slag, basic raw material for the plant, comes from Sorel, Quebec, only 40 miles downriver.

Russell Elston, Tech. Asst. to Res. Mgr., Nekoosa-Edwards...

. . . at the Potsdam, N.Y., mill, has been chemical engineer in the Nekoosa, Wis., mill. A graduate of U. of Wisconsin, Mr. Elston was previously in the pulping and papermaking section of the Institute of Paper Chemistry for six years.

Overlays Are Here to Stay . . .

. . . according to 3rd national survey of alkaline digester corrosion which also brought out that most critical areas are in middle shell . . .

● Alkaline digester corrosion activity was summarized at the 12th Annual Fall Engineering Conference in Cincinnati by Harold M. Canavan of Mutual Boiler and Machinery Insurance Co. This was the third such survey, covered some 26 mills with a total of 216 digesters (192 carbon steel; 24 stainless steel Inconel lined or clad).

Corrosion rates were close to previous studies. Location of critical areas: 37.3% reported the middle shell; 24.3% the upper shell.

Some 40.7% of mills reported corrosion had decreased; 17.5%, increased. What stood out, however, was the more than 40% reporting "no change or don't know."

The critical area for carbon steel was in the middle shell. Nine mills were using stainless steel overlay in 25 digesters. Mr. Canavan said this seems to be the best application to retard corrosion and is here to stay. One mill reported that sprayed metalizing was coming loose after two years.

Other Excerpts from Report:

It's helpful to shift nozzles in the critical areas, moving them from one section to another.

Some mills believe that the critical area no longer exists when they overlay.

Few mills (5%) reported dome corrosion. "We don't have a serious problem with corrosion above the liquor level."

Cause of corrosion: 23.9% said liquor charging; 15.3%, circulating; 10.2%, chip impingement; 31%, don't know.

The problem of corrosion boils down to how the cooking liquor is charged into the digester, volunteered one speaker. For instance, one new digester showed the marked effect of hot wall corrosion after three months, with practically no corrosion otherwise.

Lyle Jenness of the U. of Maine reported on a study of the corrosion of stainless steel, titanium and titanium alloys by ammonia sulfite liquor. Titanium showed the best resistance, he summarized.

How Corrosive Are Neutral Sulfite Liquors On Mild Steel?

This was a question posed at the Engineering Conference along with a sponsored study to the Institute of Paper Chemistry. Here are excerpts from this report by Richard B. Kesler of IPC:

The major cause of steel corrosion in neutral sulfite liquor is the reduction in pH that occurs during the cooking cycle.

Negligible corrosion occurs above pH 10; definite corrosion begins between pH 10 and pH 9.5, increases in intensity as the pH decreases.

Thiosulfate and hydrosulfide act as corrosion stimulants in neutral sulfite as well as kraft liquor.

To reduce corrosion, pH should be kept as high as possible by adding the greatest permissible amount of sodium carbonate to the cooking liquor.

Some conclusions:

The fall in pH of the liquor during the cook is a major cause of corrosion of mild steel. A second factor is the presence of thiosulfate in the liquor below pH 10.

Hydrosulfide probably adds to the initial attach on steel of liquor below pH 10 but seems to suppress corrosion caused by combined combination of thiosulfate and decreasing pH. Its exact role is unknown.

The polarization curve exhibits two major waves in the anodic region.

Corrosion of liquor handling lines and vessels may be controlled by addition of the proper amount of buffer chemical to the cooking liquor. The object is to keep the pH as high as possible and yet have the cooking liquor keep its essential pulping qualities.

Two polarization curves show that except for a shift in the curve to about 0.5 volts, higher potentials, the curve is very similar to polarization curves in kraft black liquor.

Canavan

Baisch

Report on Corrosion

HAROLD M. CANAVAN, Mutual Boiler and Machinery Insurance Co., says stainless steel overlay seems to be best application to retard corrosion. STEVEN J. BAISCH, design engineer i/c engineering, Thilmany Pulp & Paper Co., completed another year as chairman of corrosion committee.

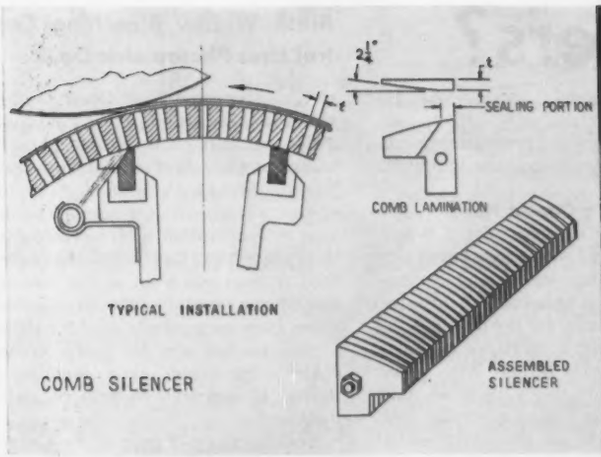
Who Were the Engineers At Cincinnati Conclave?

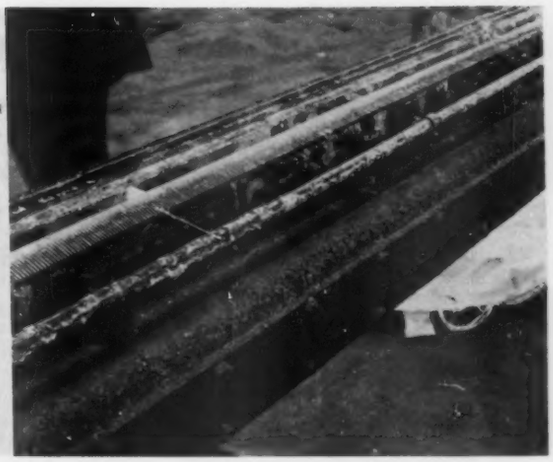
Twenty-six states and two Canadian provinces sent pulp and paper company engineers to the TAPPI Fall Engineering Conference Sept. 23-25.

Since it was in their home state, Ohio mills led with 33 delegates. Wisconsin was a close second with 30 and New York came third with 20.

Next in order: Virginia, 18; Pennsylvania, 14; Florida, Georgia and Tennessee, 13 each; Michigan, 12; Texas and Maine, 8 each; North Carolina, Maryland and Quebec, 6 each; Massachusetts, Illinois and California, 5 each; South Carolina, 4; Arkansas, Indiana, Minnesota, New Jersey, Washington and Ontario, 3 each; Louisiana, 2, and Alabama, Connecticut and Vermont, 1 each. Only three important pulp and paper states didn't have any—Oregon, Mississippi and New Hampshire.

This was up to Monday night when total registration was 783, of which 242 were mill men (there were 90 wives).





Scott Paper's Comb Silencer . . .

. . . shown in sketch at left is cross section of a typical installation in Scott mill. Also shown are construction features. At right is comb silencer in operating position on suction box. In lab tests silencer effected 25 db reduction; in mill trials, 15 db.

This is proof that . . .

Paper Mill Noise Can Be Silenced . . .

● Something can be done about paper mill noise but a company must be willing to spend time, money and effort. Much progress has already been made by specially-drilled hole patterns, solid shoe silencers and comb silencers for suction rolls, housings for refiners, altered patterns on winder drums.

What Scott Did . . .

For instance when Scott's Chester, Pa. mill put one of their comb silencers on a high speed tissue machine, it produced a 15 decibel (db) reduction and the remaining roll noise was completely masked by general background of paper mill sounds.

Scott liked the results so much they decided to equip nine other machines at Chester with this device, and have installed more than 10 at other Scott mills.

Because of the potential benefits to the industry, Scott grants royalty-free licenses to other paper producers for its manufacture and use.

The Decibel Devil . . .

At TAPPI's 12th Engineering Conference in September in Cincinnati, paper mill engineers crowded the paper mill noise abatement session. Paper mill noise has always been with the industry, said Chairman M. N. Davis, senior research consultant for Kimberly-Clark Corp., but it wasn't until the industry's machines began hitting speeds faster than 1200 fpm in the Thirties that something began to be done about it.

The finer principles of decibel ratings and what they mean were explained by Crown Zellerbach's research specialist, Dr. D. L. Shinn. He said that if a suction roll noise was reduced from 111 db to 104 db, then the noise level was less than ½. The damaging level is between 85 db and 105 db and somewhere in these areas is the borderline of damage. Uncertainty exists as to what exact level is the damage level.

Crown Zellerbach recently made a study of two identical California machine rooms which had cutters for bag tubes. One bag room has a conventional high speed bar cutter to cut the bag tube; the other has a rotary type cutter. The conventional cutter room has a noise level of 103 db; the rotary, 97 db. By installing the rotary, CZ cut the noise level in half.

How Beloit Reduces Noise . . .

It's not the suction roll that makes the noise, it's the hole explained E. J. Justus of Beloit Iron Works. By altering the hole patterns in suction roll covers plus a solid shoe silencer, Beloit has reduced the noise level on some newsprint machines from 95 db to 86 db. "You can't hear the suction roll noise at all," he said. In fact, you can talk in normal tone next to the machine.

But suction rolls are not the only vociferous culprits. Winders are, too. In one application, Beloit engineers redesigned the grooved pattern on a winder drum. The winder now runs at 6,000 fpm below 100 db. Previously, it was 119 db.

Plastics-Uses Increase . . .

H. G. Davis and E. A. Erich of Tube Turns Plastics, Inc., Louisville, Ky., gave an interesting paper on plastic piping—now increasingly popular in chemical mills—and its costs. Uniform dimensional standards have been adopted by all of the major manufacturers of plastic pipe and fittings, intensive property studies of various plastics have been completed and published, and a whole new series of plastics, especially designed for industrial pipe service, have been developed.

As a result, plastic piping has gained wide acceptance, not as an ersatz replacement for metal but for its own utilitarian properties, which are now well understood. Simply specifying "plastic" for any given piping installation today is as unrealistic as it is to specify simply "metal." Just as the exact metal or alloy is specified in metallic piping, the exact plastic needed to meet the service conditions of each installation also must be specified, according to the Tube Turns specialists.

How Good Are Dryers?

● "We don't do a good job," John Verwayen, chief engineer for Gibraltar Corrugated Paper Co., Inc., told the TAPPI Engineering Conference. "All the operator can do, with equipment now available, is to "overdry." The practice is to use the last 10% to 25% of the dryers for drying up the center of the sheet.

The tall engineer from Holland was stressing the progress made in controlling papermaking variables up to but not including the dryer section.

"As the sheet travels through the dryer section there is nothing we can adjust to compensate for moisture variation of the entering sheet. What is worse, a sheet entering with uniform moisture across will be subjected to non-uniform drying. As a rule the edges dry faster than the center.

"An example of overdrying: edges of the sheet are 95% dry at 75% to 80% of its travel through the dryer section. So we keep on drying until the center has 5% moisture, the edges then will have about 3% moisture. Then we add water to the sheet at the calender stack and even out the moisture across the sheet to about 6% or whatever the customer wants.

"This wasteful practice costs our industry millions of dollars yearly in extra steam consumption and extra equipment investment."

Gibraltar Experimented . . .

. . . with many ideas but the most promising appears to be adjustable V.A. nozzle headers. This would be a hot air nozzle header to admit more hot, dry air in those areas where the sheet is wettest and less where it is dryer. The nozzle header must be adjustable while the machine is running, to produce a uniformly dried sheet day in and day out. Gibraltar will report on this idea soon.

You Can Check Overdrying . . .

. . . by taking moisture tests on the front side of the dryers, explained Mr. Verwayen. "If the front of the sheet is sufficiently dry 15 dryers from the last dryer, we use that number of dryers for overdrying. To get a sheet uniform in moisture cross directionally we overdry. This is wasteful, a hidden waste item which is not published to the accountant."

He concluded, "We are looking forward to cross directional drying controls to eliminate overdrying and to operate our machines more efficiently."

Ed Olmstead, president of Eaton-Dikeman Co., chairmanned the drying session which drew a good attendance. The Gibraltar paper was the highlight.

Consolidated's Closed Hood . . .

R. L. Sleight of Consolidated Water Power & Paper Co., also gave a paper on the elaborately-built and most impressive Ross Engineering Corp. totally enclosed hood for the new 184 in. Beloit high speed book paper machine at Consolidated's Biron, Wis., mill. The closed hood is giving more uniform drying and saving steam and generally is one of the outstanding features of this mill addition. Operational data he presented showed the increased efficiency of this type Ross dryer.

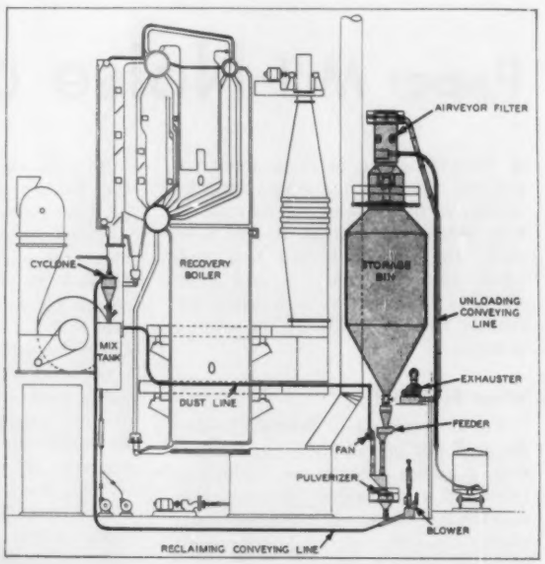
Black Widow Bleaching Control Uses Photometric Device

. . . reported Noel Obenshain, of the Luke, Md., mill of West Virginia Pulp and Paper Co. He told how it measures the reflectance of slush pulp flowing through a section of glass pipe or past a transparent window. The device in cooperation with suitable controls regulates the bleaching agent feed to maintain pulp at the viewing station at a constant reflectance value. It has been successfully used for chlorination control and for batch hydrochlorite bleaching, as a monitoring device. It appeared to be a ruggedly built unit.

Bulk handling of pulp at the Crown Zellerbach mills in Elk Falls, B.C. and Antioch, Calif., were described with slides by F. D. Helversen, an efficiency engineer with that company.

For Unloading Salt Cake . . .

This continuous reclaiming system by Fuller is a late development in . . .



Pneumatic Conveying Systems . . .

● Salt cake consumption by the pulp, paper and paperboard industry was 714,995 tons in 1953, is expected to hit around 1,150,000 tons by 1975.

The trend in salt cake storage is to vertical steel bins. Storage is trouble-free when the bin is kept live by withdrawing salt cake from it daily. If two or more vertical bins are used, care should be taken by operators in scheduling withdrawals from their storage bins. These were highlights of a paper given at the Engineering Conference by H. A. Stoess, Jr., sales engineer of the Fuller Co.

Reasons for using pneumatic conveyors: Cleanliness, ease of maintenance although maintenance is relatively high, and containment during conveying, said Mr. Stoess.

Types of Pneumatic Conveying Systems . . .

Most common is the pressure type, whereby salt cake is introduced into a positive pressure conveying stream and blown to a single stage cyclone receiver above the service bin in the recovery unit.

Vacuum systems have an advantage of short conveying distances where they are used to both unload and re-

claim. Main feature is that it is entirely dust retentive by itself.

The continuous system is a late development, said Mr. Stoess. Salt cake is conveyed from the outlet of the storage bin directly to the mixing tank without use of a service bin in the recovery unit.

For power requirements for pneu-

. . . continued

matic vacuum unloading systems, a good rule of thumb is 7½ hp per ton of salt cake unloaded per nour. For pneumatic pressure systems 5 hp per ton is a good average figure.

NICHOLSON

Key to Increased Productivity is Research

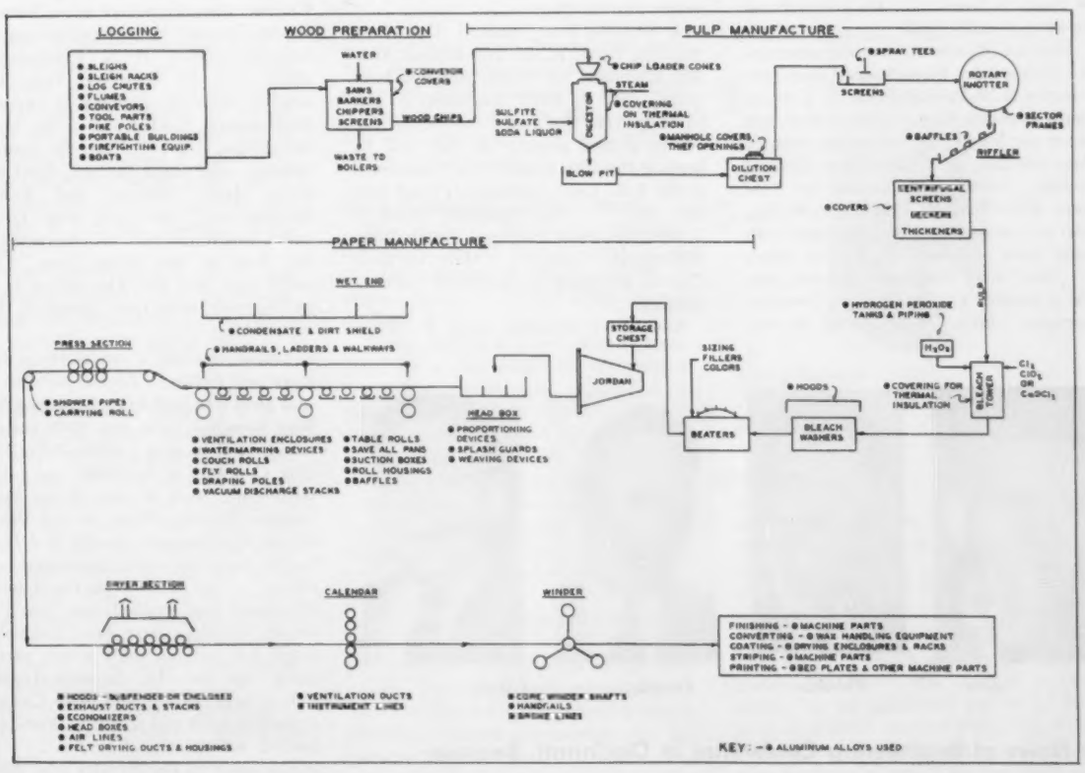
This was the theme of Gunnar Nicholson's featured speech at the 12th Engineering Conference. Those who expected the president of Tennessee River Pulp & Paper Co. to speak of his company's plans were disappointed. Instead, with the experienced hand of one who has helped guide the industry through much of its recent history, the Swedish-born engineer talked about research—particularly in fields of atomics and automation.

A surprising statement was that it would be the high fuel cost countries such as the Scandinavian and backward countries which may develop atomic energy for industrial power rather than the U.S.A. and Canada. The role of the U.S. may be limited to building these plants rather than using them, conjectured Mr. Nicholson.

Research, he explained, has provided many technological developments recently, but because of present emphasis we shall see big applications in all industries in the next few years. From some $5 billion spent for research in 1953, industry plunked down another $8 billion in 1956.

On the negative side he deplored the amount of solar energy being wasted, but spoke encouragingly of the development of small silicones to convert solar energy to electrical energy.

To make full use of technological development in atomics and automation, the years spent in school by engineers must be extended, he urged.



Here's Where Aluminum is Used in Pulpwood, Pulp, Paper and Board . . .

Aluminum's place in the industry extends from logging operations through pulp, paper and board manufacturing and shipping, said Harry W. Fritts and David G. Vandenburgh of Aluminum Co. of America in a paper given at the Engineering conference. Aluminum doesn't belong in contact with sulfite and kraft liquors.

A new application is an aluminum grill over P. H. Glatfelter Co's. new Fourdrinier as a condensate and dirt shield.

Aluminum is used principally because of its resistance to corrosion, its light weight, strength and freedom from maintenance.

Chit-Chat from Cincinnati . . .

News of Engineers and Their Doings . . .

—Cincinnati, O.

● There were 783 delegates registered at the 12th annual TAPPI Engineers Conference up to 6 p.m. Mon. Sept. 23. Of this number, 242 were mill men, 438 were suppliers and other salesmen, 21 were from colleges, research institutes and publications and 90 were wives.

RALPH LEIGHTON of Stowe Wooebwardly (sic) was the way the otherwise very accurate registration list read, but everyone knows there's nothing wobbly about Ralph. . . . Two trips to Europe this year preceded attendance in Cincinnati by ROY W. EMERY, Toronto consulting engineer. . . . Past chairman CHARLES SIBLER, West Virginia P&P chief engineer, missed the meeting as he and Mary were flying to Lisbon and Zurich. . . . After Cincy, RONALD GOODWIN of Black-Clawson Co. was off on another trip to Japan. . . . So was SAM BRATTON of Pusey & Jones . . . the international business is really brisk. . . .

MERRILL ROBINSON, youthful construction engineer for Weyerhaeuser, had quite a search in the multitude for M. J. POLK, North Carolina Pulp engineer—they had never met before, but the merger brought them together. . . . CHET REIS, General Electric, Seattle, was located by TOM REES, Allis-Chalmers, Charleston, W. Va., who wanted to meet "the other man with same name" (though not spelled alike). . . . There were 19 Reliance Electric men but a regular, FRANK DENISON, Houston manager, couldn't make it and he was missed by many friends. . . . AL CHERRY from Cleveland office was a first-timer.

STEVE BAISCH, who has had charge of engineering for much expansion at Thilmany, including three new machines since the war, had done such a good job as corrosion committee chairman that his associates weren't letting him resign, at last reports. . . . HAYDEN TAYLOR, Black Clawson ad mgr., gave lot of time and did a masterful job publicizing the conference.

MYRL N. DAVIS, who heads up research and development for Kimberly-Clark, admitted he was a "ringer" among the engineers, but he did a good job for them chairmanning the round table on mill noise abatement. . . . FRANK H. COLDWELL, Nekoosa-Edwards chief engineer, had spent many weeks at Nepco's new Racquette River (N.Y.) division, directing engineering and was home only one day before the meeting. . . .

A fivesome from Portland, Ore.—JACK WILCOX, Esco; BLAKE HONEYMAN, Morden Machines; SID DREW, and BOB PORTOUW, both of Drew Engineering, and JACK BEAVER, Hoffman Construction Co. —were getting pointers as they will be hosts at the 13th Engineering Conference at the Rose City's Multnomah hotel next July 28. . . . One delegate, ALAN J. TOOTH was from England—Portals Ltd., Whitchurch, Kent. . . . Only 19 from Canada, including wives, included mostly suppliers. . .

New faces included KARL F MAAS, sales mgr., and GORDON J. LINDL, chief engineer, Ardrier Dehydrator Div., Heil Co., Milwaukee, whose pulp dryer is being used for first time in this industry in Far West noodle pulp mill. . . . DAVID T. SMITH, sales engineer, Composite Div., Jessop Steel Co., Washington, Pa., was another new face at the meeting, interested in special stainless and clad stainless developments . . . the Cincinnati Club, nearby, was home here for ED HOPPER, Union Trust Bdg., Pittsburgh, and one of this industry's top corrosion specialists. . . .

BUMPS HEMPHILL, a founder of the Engineering division, was on hand for the first time in his new capacity as sales mgr. for Carthage Machine. . . . WILLIAM STREED, pres. of the new Streed Products Corp., specializing in stainless and alloy piping and equipment, reported he has moved into the new plant and offices 12th and Gardner St. (Box 447), Gadsden, Ala. The rest of Streed Fabricating Co. at Attala, Ala., was sold to Whiting Corp. . . .

Allis Chalmers staged one of biggest dinner parties of any conference yet, this being home of Norwood plant, with many products for pulp and paper ED F. GREIWE, mgr. of product sales, Norwood; FRANK FORREST, veteran pumps specialist from Milwaukee, H. K. KINGSBURY, in similar role at Norwood, VERN HONSINGER, Norwood engineer in charge of development, headed one of the biggest delegations, too . . . for the honor of delegate who came farthest, YIH-CHANG YANG, from Taiwan, and KRISHNA KHANDELWAL, who hails from faraway India, would probably take top prizes but Mr. Yang is from Mead Corp., Chillicothe, now and Mr. Khandelwal is now an engineer with Rice Barton in Worcester, Mass. . . .

Young men with a vision—HUGH RIENHOFF and PETER G. ZOUCK, partners who quit good jobs with big engineering firms, have launched their new little company based on their own patents—Alloy Cladding Co., Inc. of Baltimore. . . . DAVE GEARHART, head of one of the busiest General Electric offices serving this industry at Kalamazoo, reports that he has had to move again into bigger and better offices . . . hot news going the rounds at Cincinnati (and verified) was that Fourdrinier machines have been ordered already for two big mills which may be going up fast—the Japanese-American mill at Sitka, Alaska, and Boise Cascade's Columbia Kraft mill at Attila, Wash., both backed with plenty of timber . . . uses of aluminum in the industry may show a big growth, according to DAVE VANDENBURGH and HARRY FRITTS of Alcoa, New Kensington, Pa. . . . Time-Life magazines, biggest buyer of printing papers, never miss a bet in searching engineering ways of cutting paper costs, and so had their DAVE ROBINSON from Springdale Laboratories on hand. . . .

Curtis

Osborne

Pringle

Wilcox

In News at Engineering Conference in Cincinnati, Because . . .

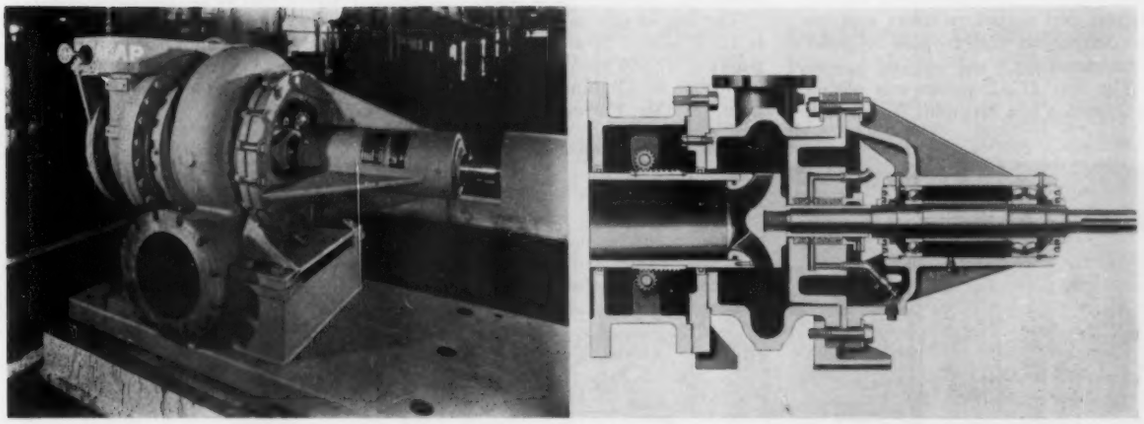
JOHN R. "RAY" CURTIS, director of mechanical research, Scott Paper Co., was elected new chairman of the Engineering Division of TAPPI.

M. J. (JOHNNY) OSBORNE, elect. supt., Bowaters Southern Paper Corp., was elected new vice chairman. He has written many reviews of electrical developments in the industry for PULP & PAPER.

GEORGE H. PRINGLE, exec. vice president, The Mead Corp., and one of the first chairmen of the Division, came back to help spark a symposium on power plant costs.

JACK WILCOX, mgr. of process equipment division, Electric Steel Foundry Co., who represented the Pacific Coast at session which launched plans for the 13th National Engineering Conference at the Multnomah Hotel, Portland, Ore., July 28-Aug. 2.

. . . continued



Now . . . ACAP, a pump with variable capacity, adjustable head and no plugging or dewatering

Mill Man Sparked Idea for This New Pump

● Here's an interesting story with an obvious moral: how good ideas can come from customers' dissatisfaction with existing equipment. It started back in 1952 when Jim Kraus of Kimberly-Clark Corp. asked Frank Forrest of Allis-Chalmers, "Why don't you design a pump so that if I want 30 gpm I can get it without plugging or dewatering."

To Frank Forrest, that was a challenge. He answered, "Sure, that's easy. Nothing to it. We can do it." But there was something to it and it did take a lot of doing.

From a Problem a Clue . . .

Back at the Allis-Chalmers' plant, the veteran pump engineer pondered the problem. "If the wear in a pump takes place between the vane and the suction wear-plates, the pump will gradually pump less stock and eventually won't pump at all. But at no time during this process of wearing does a plugging or dewatering effect occur." From this aggravating problem of wear came a clue—an adjustable "wear-plate."

The results of such thinking is ACAP (Allis-Chalmers adjustable pump).

How It Works . . .

Secret of ACAP is an internal by-pass cylinder adjusted by manual or automatic control to create a variable clearance between the revolving impeller blades and the cylinder. Results are a controlled flow from the discharge nozzle of the pump.

At its outer limits the cylinder gives zero flow, maximum recirculation. At its inner limit, maximum flow with minimum recirculation. Thus, an operator can vary capacity or head without changing pump speed.

How Automatic Control Works . . .

The recently developed automatic control for ACAP may be used for accurately regulating process liquids, to control pressure, liquid level, volume or flow.

Pump output is automatically regulated by a pneumatic-electric system controlling the by-pass cylinder drive motor. Adjustments of the set point and proportional band are by a pneumatic recorder and controller which can be remotely controlled.

Sensing and measuring elements are available for regulating liquid level, various pressure ranges or flow of various liquids and liquids carrying suspended solids.

An air pressure signal proportional to the amount of deviation from the set point strikes a diaphragm in the controller. The diaphragm operates both the recorder and a control valve which amplifies output air supply to the pneumatic positioner.

Output air signal from the controller operates a pilot device in the pneumatic positioner which controls a valve in the main air supply line and positions the output cylinder. A rack and pinion gear translates vertical cylinder motion to rotary motion to operate an electrical control rheostat on the pneumatic positioner. The control

Frank Forrest . . .
. . . is known as Mr. Pumps at Allis-Chalmers.

When he received his B.S. in electrical engineering at Tri-State College in Angola, Ind., and after some graduate work at Purdue U., in 1920, Mr. Forrest headed straight for Allis-Chalmers. There for two years he took a shop and graduate training course, then moved onto centrifugal pump engineering.

It was in 1926 that Allis-Chalmers did some special research work in paper mill pumps. Mr. Pumps was assigned to this study, "on the paper mill end of it." He went to Abitibi's Iroquois Falls, Ont. mill, "where we ran all of our pipe friction data for three months." He has been on paper mill enginering sales ever since.

Mr. Forrest has been on TAPPI's Hydraulic Committee since it started nine years ago to determine pipe friction of paper stock.

In September he celebrated his 37th year with Allis-Chalmers.

rheostat gives an electric signal to the static control.

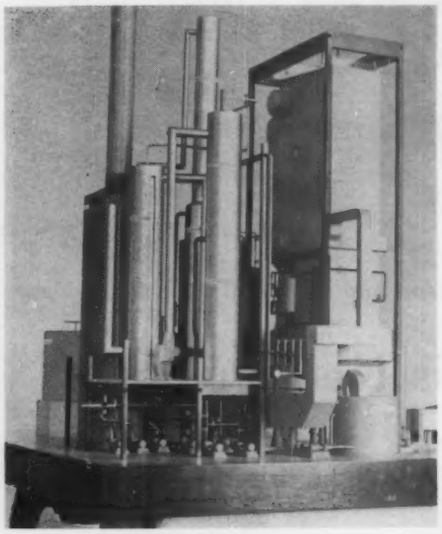
This control has two magnetic amplifiers connected in a push-pull circuit, together with associated control circuits and output rectifiers supplies dc current to the by-pass cylinder drive motor.

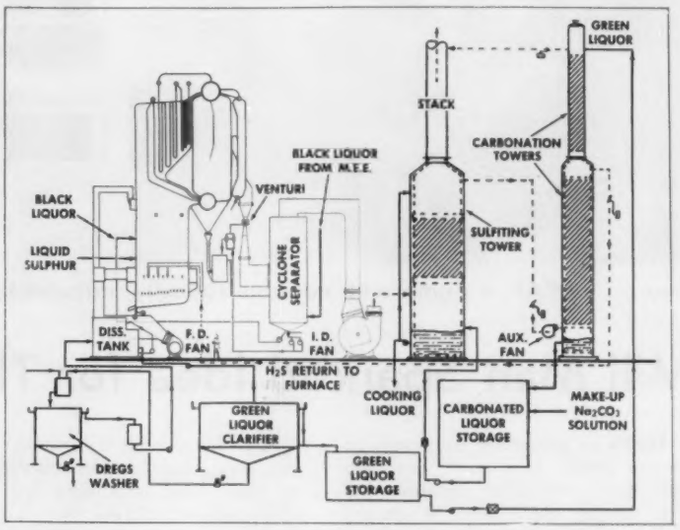
The first ACAP pump was placed in operation in a Memphis, Tenn. mill, pumping stock to a proportioning system. Today, some 65 units have been sold, some 50 are already in operation and "giving good service, too," comments Mr. Forrest with a smile.

The largest unit in service in a mill is 42x36 with a 50-ft. head and a capacity of 37,000 gpm. Ultimate capacity for an ACAP pump can be 47,000 gpm, says Mr. Forrest.

Applications for ACAP include from blow pit to washers, fan pump, proportioning, machine head box supply and refiner supply.

"Every mill so far has liked ACAP. The best recommendations are the repeat orders. One mill has 11. Customers' comments are very favorable. The pump helps make an excellent sheet," says Mr. Forrest.





Found: An Answer to recovery of NSSC liquors . . .

Model (left) and diagram (right) of first commercial installation at Heald Div. of

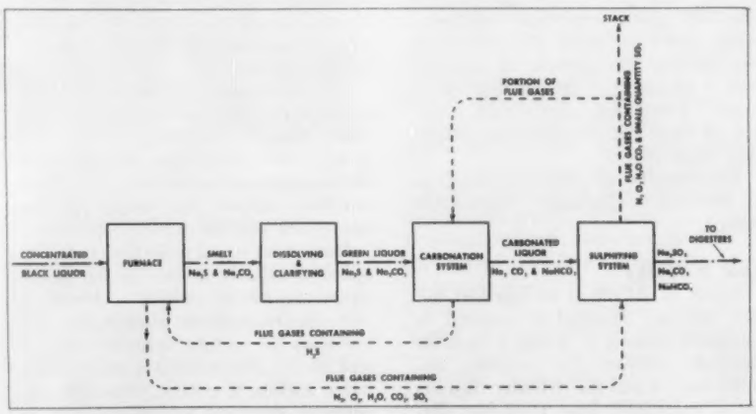
Mead's New NSSC Recovery Process

● The Mead Corp's. interest in recovery of neutral sulfite semi-chemical liquor stems from 1927 when it began production of chestnut corrugating board by the NSSC process. Since then, working with Babcock & Wilcox and others, Mead has studied the collection, evaporation and burning of waste liquor solids and the elimination of sulfur compounds from the recovered furnace product by control of combustion conditions. The idea: obtain a sodium carbonate product similar to soda process recovery system. Early results indicated that neutral sulfite cooking liquors could be burned in commercial furnaces.

Briefly, here's how it works:

Spent black liquor is washed from the pulp, concentrated in multiple effect evaporators, and burned in a kraft type recovery furnace. Resultant smelt is dissolved to form a kraft type green liquor of very high sulfidity. Green liquor is contacted in packed "carbonation" towers with some of the recovery furnace flue gases.

The green liquor absorbs carbon dioxide (CO_2) from the flue gases and liberates hydrogen sulfide (H_2S) into the flue gases, converting the sodium sulfide to sodium carbonate and bicarbonate. The H_2S bearing flue gas leaving the carbonate towers is returned to the furnace for burning. Carbonated green liquor is used to scrub all the furnace flue gases in a packed "sulfiting" tower to recover SO_2. The SO_2 absorbed forms sodium sulfite in the carbonated liquor, so that the liquor leaving the sulfiting tower is



Schematic diagram of Mead NSSC recovery concept

suitable for cooking purposes.

This process is expected to recover approximately 97% of the sodium and 92% of sulfur supplied to the system in the form of evaporated black liquor and makeup chemicals.

Two plants are now in commercial operation of this process: Mead's Heald Division at Lynchburg, Va., and Watervliet Paper Co. at Watervliet, Mich. Initial reports: very satisfactory.

Operating Details . . .

1. Black liquor from the multiple effect evaporators is fed into the venturi scrubber. Its function is to concentrate the liquor, avoid fume nuisance, and reduce contamination of sulphited liquor with sodium sulfate fume and fine carbon carryover.

2. Black liquor is then burned in the recovery furnace.

3. Smelt is dissolved in a conventional green liquor smelt dissolving tank. Green liquor is clarified in a single compartment clarifier with the usual dregs washer. Weak wash from the dregs washer is returned to the dissolving tank as makeup water. A clarified green liquor storage tank permits suspension of carbonation system operation, when desired, without disturbance to the remainder of the system.

4. Liquor is fed from the green liquor storage tank to the top of the precarbonation tower where it is contracted by about ⅓ of the total carbonation tower system gas flow. This gas contains hydrogen sulfide when it enters the precarbonation tower but at the exit, having been scrubbed by the incoming green liquor, the hydrogen sulfide content has been reabsorbed and the hydrogen sulfide free flue gas is then discharged to the atmosphere.

The now partially carbonated green liquor at the bottom of the precarbonation tower has absorbed hydrogen sulfide to the extent that all the sodium sulfide present in the incoming green liquor has been converted to sodium hydrosulfide; also, a significant quantity of carbon dioxide has been absorbed with the consequent conversion of some sodium carbonate to sodium bicarbonate. Under these conditions, the liquor attains its maximum hydrogen sulfite vapor pressure and it is at this point that the hydrogen sulfide content of the flue gas is at its maximum and is taken off for return to the furnace.

5. The liquor is then routed through the "main" carbonation system countercurrent to the flow of approximately 25% of the flue gas resulting from combustion. The liquor absorbs carbon dioxide and releases hydrogen sulfite, the gas gives up carbon dioxide, takes on hydrogen sulfite. Hydrogen sulfide content of the flue gas returned to the furnace is about 5% by volume. A large tank is provided for storing the carbonated liquor, again to permit out-of-phase operation of the towers and the furnace.

6. A packed sulfiting tower scrubs the SO_2 from all gases leaving the venturi scrubber. Carbonated liquor is the scrubbing medium.

7. Sodium makeup to the system is added to the carbonated liquor storage tank as a sodium carbonate solution, by automatic level control.

8. Sulfur makeup is by burning raw sulfur in the furnace, or by a separate sulfur burner, with introduction of the resulting surfur dioxide into the flue gases prior to the sulfiting system. It is conceivable that salt cake could also be used as makeup by addition to a liquor mixing tank prior to incineration in the furnace.

. . . continued

TAPPI ENGINEERING REPORT

Governing Systems for Turbine Generators are Versatile . . .

. . . so reported G. H. Gibb and W. B. Wilson of General Electric Co. at the electrical and power sessions of the annual Engineering Conference. These systems can automatically perform any functions required in paper mill power plants. This has been proven by experience, and material in this paper will familiarize power engineers with additional features of turbine governing systems that can be utilized to reduce operating costs.

In addition to the governing of automatic extraction and automatic extraction admission turbines supplying power and steam for process, the effect of uncontrolled extraction for feedwater heating was discussed. Uncontrolled extraction openings in automatic extraction turbines are of increasing interest because of the economic trend to higher initial steam pressures and temperatures and additional stages of feedwater heating.

This paper very briefly described the functions of a few basic governing components. By specific examples, it then showed how these components can be used in various combinations to provide the control and operating flexibility required in different paper mill power plants. Performance of governing systems under different normal and emergency operating conditions were reviewed to indicate versatility of turbine governors to minimize plant disturbances during an emergency.

Oxford Paper Co. Improves Process Water by Coagulation

. . . according to S. R. Cooper and A. H. Tifft, from the Rumford, Me., mill. Their paper at the Cincinnati conference told how Oxford's water availability conditions made it necessary to develop a method of treating water containing sulfite spent liquor. Laboratory studies supplemented by pilot plant data indicated that the most feasible process for improving the quality of the available water was coagulation in a high rise rate, upflow unit. Methods of measuring color, turbidity, and sulphite spent liquor concentration were adapted to a filter photometer. Coagulation studies included novel laboratory methods. Successful coagulation of water containing sulfite spent liquor was the key to the problem of assuring an adequate supply of high quality process water.

The development work showed that maximum quality and adequate quantity of process water could be obtained by alum coagulation of a blend of waters from two rivers each of which required a radically different treatment. The problem of automatic chemical feeding was solved by the installation of two proportioning systems, each paced by its respective raw water.

Engineers Plan Vacations To Tie In With 1958 Meeting

A number of industry engineers told PULP & PAPER editors at Cincinnati that they are already making plans to take their vacations on the Pacific Coast next year, in order to tie in with the 13th Annual TAPPI Engineering Conference at the Multnomah Hotel, Portland, Ore., July 28-Aug. 2.

At several points near Portland, boat and tackle can be rented for deep sea King or Chinook salmon fishing, which will be at its height at the time of the meeting. Inland water cruises are also planned. One delegate said he will take his family to Alaska.

Weyerhaeuser Timber Co. is going to be host at a spectacular show of high climbing, giant timber falling, capped by a fabulous logging camp meal. This will be on slopes of scenic snow-capped Mt. St. Helens, where some of the greatest advances in scientific tree farming will be demonstrated.

Several Plants Using New Pulp Dryer . . . which makes shipping and storing easier . . .

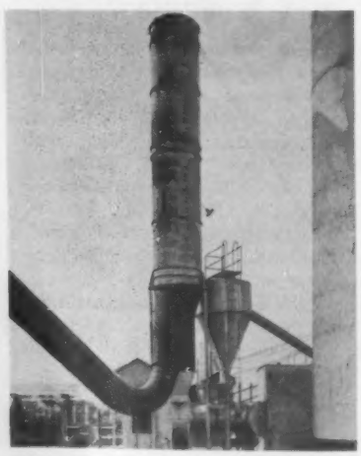
A pilot plant using the Glomera flash drying principle developed by Pawert A. G. of Switzerland is reported to have given good results in tests on different grades of groundwood pulp. Canadian Sumner Iron Works Ltd., Vancouver, B.C., installed the equipment at the John Breakey Ltd. mill in Breakeyville, Quebec, and tests were made under direction of Louis Gagnon, gen. supt.

Canadian Western Division of Crown Zellerbach Canada, Ltd., has a Glomera dryer at its Fraser Mills, primarily to handle hog fuel, and two British Columbia mills, Canadian Forest Products, Ltd., and Western Paper Co., Ltd., plan to experiment with the dryer. Harbor Box & Lumber Co., Los Angeles, and Columbia Hardboard, Everett, Wash., also have Glomera equipment.

The system's wet end has conventional pulp deckers or cylinder molds and a screw or disc dewatering press discharging pulp at about 30% consistency. The first drying stage is a double disc Novorotor pulp fluffer, followed by two Glomera drying towers and a reciprocating pulp compressor which discharges pulp sheets 24 in. x 16 in. x 1 in. with a density of 35 lbs./cu. ft.

Heat source for the drying units can be direct oil or gas firing through specially designed mixing chambers or waste flue gases from boiler plants passed over an air or steam heat exchanger unit. Low fiber temperature is maintained throughout, the highest discharge temperature being in the range of 150°F. The relatively high intake temperature evaporates the water in a flash, reducing the temperature rapidly.

Quality of the processed groundwood is said to remain as good as the wet lap product, with no loss of strength or brightness, and has a highly increased re-slushing quality. Beater time was reduced to a third of that for wet groundwood lap now being shipped. The dried groundwood proved successful in a standard run on a paper machine in a U.S. mill.



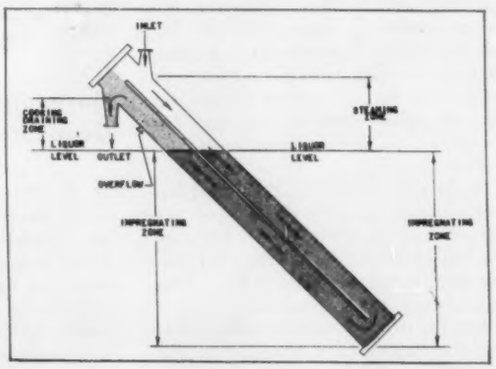
Swiss Dryer Has Scotch Traits . . Low initial capital investment plus automatic operation which reduces operating costs make the Glomera Flash Dryer developed by Pawert A. G. of Switzerland an economical pulp drying system.

B. C. Forest Products Mill Now Slated for December Start

Vice President Dave Brittain of Mead Pulp Sales, New York, and Bob Callahan, head of pulp sales out of the Chicago office, left in September to visit the new market bleached kraft pulp mill of B. C. Forest Products Inc., at Crofton, B.C., which is now slated to go into production in December.

Recently John Grieve, mill manager at Crofton, who formerly was with Brown Co., and Mort Richmond, assistant to the president, B.C. Forest Products, were visiting paper mills in the east. They traveled with Mr. Brittain, Bill Barrett, Bruce Brown and Morry Horton, out of Mead Pulp's New York office, and in the Midwest with Mr. Callahan and Bob Wolter, newest member of Mead's Chicago staff, a graduate of the Mead training course in Ohio. Mead is the sales agent for Crofton pulp.

A New Type of Continuous Digester



. . . which Blandin Paper Co. will install. As much as 90% of this digester—most of the lower section—can be outside the building.

—Grand Rapids, Minn.

Directors of Blandin Paper Co. have authorized construction of a new 30-ton per day continuous chemical-mechanical pulp mill, using a recently developed process.

A Bauer Bros. Model M & D continuous digester will be the main unit. Several cooking zones can be established in this digester, as desired, such as steaming, impregnating, and cooking, either submerged or vapor phase. The digester is an angled tube, with inlet and discharge on same operating floor, discharge at an elevated level to allow gravity flow, and no elaborate foundation is required. Liquor impregnation is by travel of the chips, which remain loose, and liquor is constantly circulated by action of traveling chips. Carrying of chips is accomplished by a series of unusual traveling compartments, with a Bauer rotary valve measuring chips at the top into individual compartments, completely filling each space.

Compartments are connected in series and travel down an upper section of the tube. The tube is divided lengthwise by a separating plate, and the compartments return upward in the lower section to a discharge through another Bauer rotary valve.

Myles W. Reif, executive vice president of Blandin Paper Co., told PULP & PAPER that all the pulp will be used by Blandin. Balsam wood and possibly some poplar will be used, he said. The plant will require an additional 10,000 cords per year, which will be purchased locally.

Doubling of the continuous cooking plant is considered for future decision.

A new 12 ft. diameter by 45 ft. long D. J. Murray drum barker will be added to process the additional wood. A new chest will provide additional storage for groundwood.

Smooth Startup at Hodge Mill

Fifteen minutes after stock was put on the wire for the first time on the new No. 4 Fourdrinier machine at the Hodge, La., mill of Robert Gair division, Continental Can Co., paper went to the bag mill.

This smooth startup on Sept. 4 was reported by Charles McCarthy, who is now in charge of all manufacturing of the Gair mills and has moved to New York City headquarters, 530 Fifth Ave. New machine is a 246 in. Beloit with differential drive. On the fourth day of operation, it produced 276 tons.

Frank Ring, veteran supt. for many years of the Hodge mill, while it was property of Advance Paper & Bag Co., likewise has moved to the New York City offices, to serve there as assistant to Mr. McCarthy.

Newly appointed resident manager at Hodge is Frank Johnson, who has been on the Hodge mill staff for 27 years, more recently in charge of industrial relations. He is a native of Baltimore, Md., and attended Baltimore City College.

New general supt. is Robert Burnett. He has had long experience in the Southern industry, formerly being at the Palatka, Fla., and Crossett, Ark., mills.

Last month, PULP & PAPER reported that with Mr. McCarthy's move to New York, Claude M. Adams, formerly general supt. at the Port Wentworth, Ga., mill, has taken over there as resident manager.

Straw is pushed through extrusion tunnel under 400° heat, compressed and laminated with cardboard liners. Liner edges are neatly turned over edges of the slab.

Swedish Machine Makes New Type of Straw Board

. . . in a plant in Havre, Mont. The building board product, Stramit, is made from clean wheat straw. Stramit Corp. holds the U. S. franchise and plans additional plants as soon as possible.

The straw comes out of the extrusion tunnel in a continuous strip which is cut into any lengths desired. The board is 2 in. thick by 4 ft. wide. It takes about two tons of straw to make 1,000 ft. of board.

Tests conducted in England show a one hour fire resistance and load tests show a point load of over one ton. George Bennett of Stramit Corp. says they successfully loaded 8,000 lbs. on a 2-in. Stramit board on a 4-ft. center without excessive deflection. A welding torch turned on a panel is said to char one side while the other side remains flat and cool to the touch.

Stramit was first produced in Sweden 20 years ago and is now manufactured and used in 14 European countries and Canada. The Canadian firm, Stramit Corp. (Alberta) Ltd. is at Innisfail, Alta. The new annex to Westminster Abbey in London and the Ford plant in Edmonton, Alta., are roofed with Stramit.

The new U.S. company was formed with Havre capital. Danny O'Neill, Havre businessman and rancher, is president, Barney Haley, exec. vice pres. and gen. mgr., Richard Rubie, treas., and Fred Weber, secy. R. R. Renne, pres. of Montana State College, is chairman of a consultant and development council.

Machinery Ordered for New Multi-Million Dollar Mill

"Substantial progress" in design, engineering and planning of the new multi-million dollar Columbia Kraft Corp. pulp and paper and Columbia Container Corp. board mill, to be built at Attalia, Wash., is reported by R. V. Hansberger, president of the parent Boise Cascade Corp.

These new mills, being built by one of the oustanding timber industries and timber holding companies of the West, will rise on a big bend of the Columbia River west of Walla Walla, Wash., and south of the tri-city area of Pasco, Richland and Kennewick.

A Fourdrinier machine to make a minimum of 150 tons of kraft bag and wrapping paper and linerboard has already been ordered. This cantilever Fourdrinier has 164-in. wire width, one suction and one plain press, 38 dryers, 2 calender stacks, one size press, V-belt drive, reel and winder—all Black-Clawson. Also ordered is a kraft recovery boiler. Foundation studies are being conducted at Attalia. Water studies have started, with view to draw mill water from wells instead of the river. The water table is quite high.

For the affiliate Columbia Container Corp. a 250-ft. long corrugating machine also has been ordered. This, according to Mr. Hansberger, is the "latest example of high speed operation obtainable in the container industry."

Hoffman Construction Co., Portland, Ore., was awarded general contract to build initial unit of the plant.

Waste wood from Boise Cascade operations will provide raw material.

Directors of Boise Cascade, headed by Gilbert H. Osgood, of Chicago, discussed plans at a meeting in Yakima, Wash., Sept. 24-25, flew over site and woodlands, had a loggers' lunch at a woods camp near Ellensburg, Wash., and visited Ellensburg and Naches sawmills of the company. This was the board's first meeting since announcement of Boise Cascade's proposed Columbia river plant project.

Supts. Lay Plans for West Coast Meeting

Lower production costs through new manufacturing methods will be featured at the Dec. 5-7 meeting of Pacific Coast Div., American Pulp & Paper Mill Supts. Assn. in Seattle, Wash. Mill visits will include Scott Paper, Simpson Paper and two Weyerhaeuser Timber pulp mills, all in Everett; St. Regis in Tacoma and West Tacoma Newsprint at Steilacoom.

Chairman is Jack V. Savage, sulfite supt. at Crown Zellerbach Camas, and technical sessions will be headed by Frank A. Hamilton, gen. supt., Simpson Paper, and Glen D. King, asst. res. mgr., CZ West Linn.

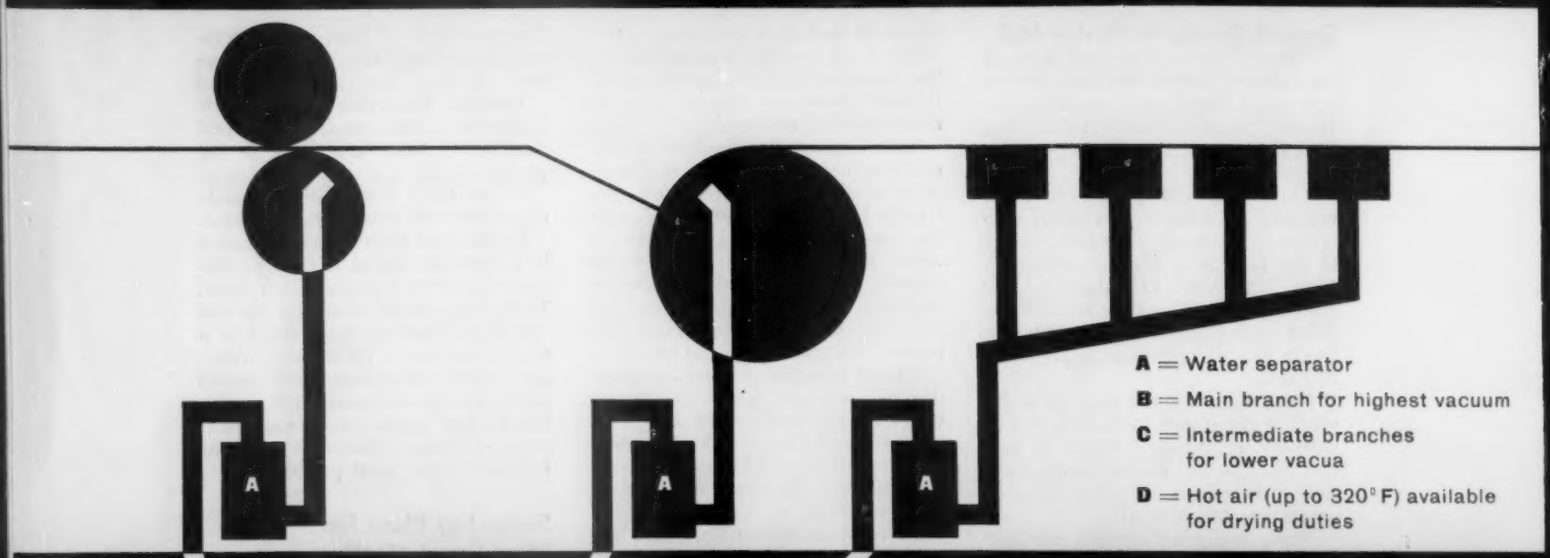
Topics include cooking bleachable kraft pulp with Kamyr continuous digesters, tissue production on small machines in market areas, productivity of people and effect on operating costs, air and water pollution control programs in Oregon-Washington, management's responsibility for company morale, etc.

The Pounds . . . The Goddens

Travelers from St. Lawrence . . .

WILLIAM T. POUND, vice pres, St. Lawrence Corp. Ltd., and his wife, Jessie, and ROGER G. GODDEN, gen. sales mgr., kraft and board, of same company, and his wife, Mary, recently journeyed across Canada. The Pounds went all way to Vancouver, but Godden returned from Jasper.

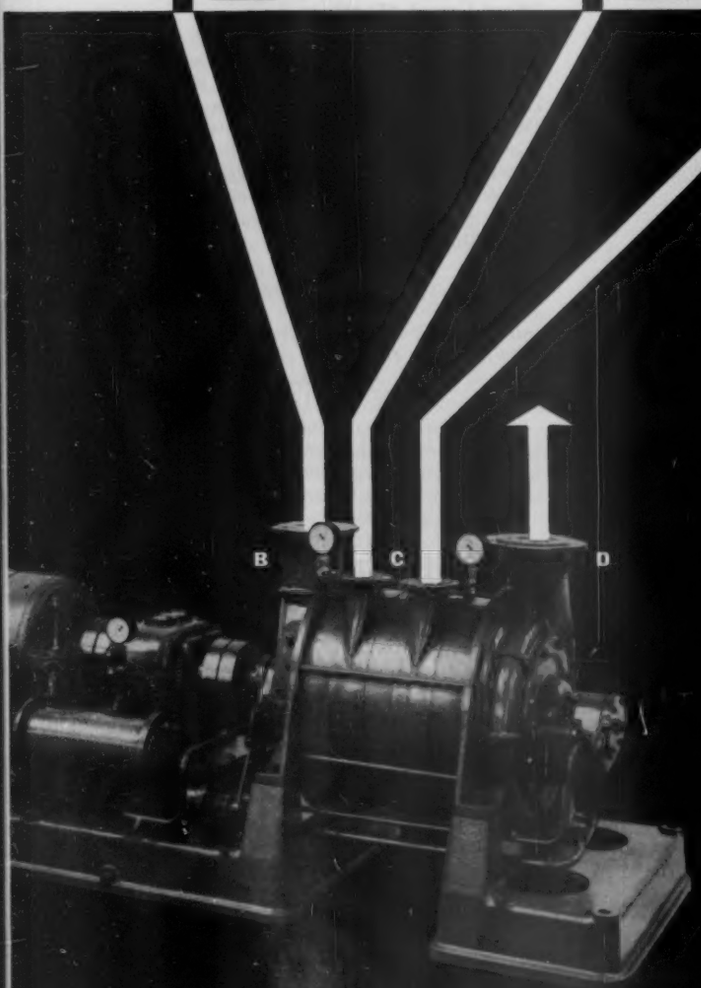
SULZER


A
A
A
A = Water separator
B = Main branch for highest vacuum
C = Intermediate branches for lower vacua
D = Hot air (up to 320° F) available for drying duties

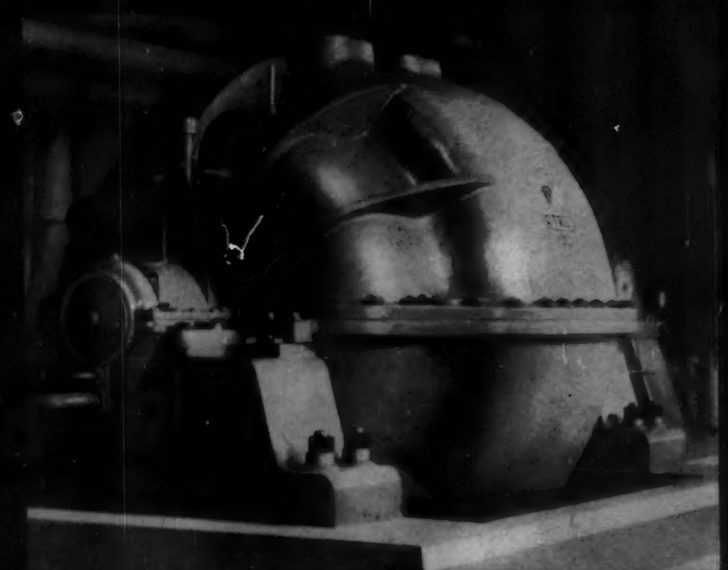
Turbo-blowers

for the new Sulzer vacuum system of water extraction from paper, board and pulp machines ■ Big power saving ■ High adaptability; small space requirements ■ Good references

Over 200 Sulzer Vacuum Blowers are in service in 13 different lands, including Finland, Sweden, Norway, England, Germany and countries overseas.



Turbo-air Vacuum Blower for Paper Machines
Power savings up to 40%



Large blower for all the suction points of a paper machine of 200 in. wire width.

Sulzer Brothers Limited, Winterthur, Switzerland

Sulzer Bros. Ltd., New York
50 Church Street, New York 7, N.Y.

C. O. Monat & Company Limited,
6520 Park Avenue, Montreal 5, Canada

Johns-Manville CHEMPAC® PACKING withstands active acids and alkalis

CHEMPAC is a new Johns-Manville Packing which combines the sealing action and heat-resistance of asbestos with the all-around chemical resistance of Teflon*. Because of its versatility Chempac greatly reduces the number of packing styles needed for mill equipment. Moreover, stocking and inventory present no problem because the inert ingredients of Chempac do not deteriorate.

Chempac is outstanding in service against most acids and alkalis at temperatures to 500°F. It is especially recommended for use in pumps handling calcium bisulfite cooking liquor, sulfurous acid and relief gases . . . on relief valves on sulfite digesters . . . on valve stems exposed to chlorine, and for other equipment in service against corrosive liquids.

Chempac Packing is available in coil, spiral and ring form for rod, plunger and valve stem applications. Johns-Manville also manufactures Chempac Gaskets, made of plies of asbestos cloth treated with Teflon.

Your Johns-Manville Packing Distributor can help you select the right Chempac Packing or Gasket for your application. For complete information, write him or Johns-Manville for PK124A, Box 14, New York 16, N. Y. In Canada, Port Credit, Ontario.

*Trade mark for DuPont Tetrafluoroethylene resin

Pioneer in packings for over 80 years

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville PACKINGS & GASKETS

This is a picture of applied research. It shows the Appleton man who calls on you in our laboratory. He is reviewing problems encountered in the field with our research and technical people. He is seeking . . . and getting . . . practical answers to problems of felt application and performance. This is the kind of applied research which keeps your Appleton man qualified to help you. Appleton Woolen Mills . . . *a working partner with the paper industry . . . Appleton, Wisconsin.*

Appleton felts

The Beloit Album

News and views of visitors, new machines, and a plant expansion program of interest to papermakers

BELOIT EASTERN CORPORATION, Downingtown, Pennsylvania—viewed from main line of Pennsylvania Railroad. Since acquisition of Beloit Eastern in the fall of 1955 an extensive expansion program has doubled the plant's manufacturing area, tripled its productive capacity. Joint objective of Beloit and Beloit Eastern: to make the best possible papermaking machinery. For more views, please turn page.

BALSTHAL PAPER Mill's president S. Aeschbacher (c) is shown with Gaston Bertrand (l) president, Beloit International Corporation, C. A., and Karl Fries, sales engineer, discussing the rebuild of one of Balsthal's yankee Fourdrinier machines.

CONTAINER CORPORATION of America's plant engineer C. A. Baier (r) and maintenance superintendent F. J. Utz (l) stop at a boring mill to pick up some fine points on the machining of dryer heads from F. R. Erbach, Beloit.

ST. REGIS Paper Company's assistant to manager of paper production Larry Waterman examines the test stand arrangement on an eight size differential drive built for St. Regis' new No. 2 Machine at Jacksonville, Florida.

RIEGEL PAPER Corporation's Dr. A. L. M. Bixler (c) recently visited Beloit to discuss details of the new Carolina Division machine with Beloit sales engineer A. G. Olson (l) and staff engineer L. A. Huerta.

Beloit Eastern in full swing Aerial view below shows the scope of the expansion program at Beloit Eastern Corporation, Downingtown, Pennsylvania. This program has brought the total manufacturing area to over 240,000 sq. ft. Employment now stands at 780. Seen from left to right in the photograph: the modernized and expanded foundry, extended machine-shop bay, new machine shop, and the huge modern main erecting floor. Shop building in the background houses the welding department, stock rooms, main offices, and engineering department. This aerial view was taken from a point immediately above the new pipe roll shop shown below.

NEW PIPE ROLL SHOP, one block from the main plant, is adjacent to the main line of the Pennsylvania Railroad. This is a self-contained department with all equipment necessary for preparing, straightening, machining, balancing, and final shipment of pipe rolls.

MAIN ERECTING FLOOR'S wide high bay provides ample space for erecting and checking components before final shipment. A receiving and shipping area is located in the immediate foreground. The bay in the background houses stock storage. New machine shop is to the left.

MEET YOUR ERECTOR

No. 2 of a series

Melvin A. Gould, known to his many friends in paper mills as Mel, is seen scribing the center line on a back dryer frame bearing fit.

Mel has been a Beloit Iron Works erecting engineer for over 15 years. During his career with Beloit he has worked in many mills throughout the United States and Canada. His job has ranged from small rebuilds to the erection of some of the largest newsprint machines in the world. When the first Beloit differential drive units were developed in 1950, Mel was one of the men who put them together and made them tick.

NEW MACHINE-SHOP BAY at Beloit Eastern houses planers, planer millers, lathes, and boring bars. A second machine-shop bay, enlarged and remodeled, runs parallel to this bay at the right. Tools are modern, accurate, fast.

FOUNDRY at Beloit Eastern has been completely modernized. This program has included a new core room, core ovens, a complete sand-handling system, modern foundry. Two cupolas supply machine shops' casting requirements.

UNWIND STAND NEARS COMPLETION on the main erecting floor as erector Kenneth Seidel assembles the sliding clutch. Two heavy-duty bridge cranes facilitate transfer of completed components to the shipping area.

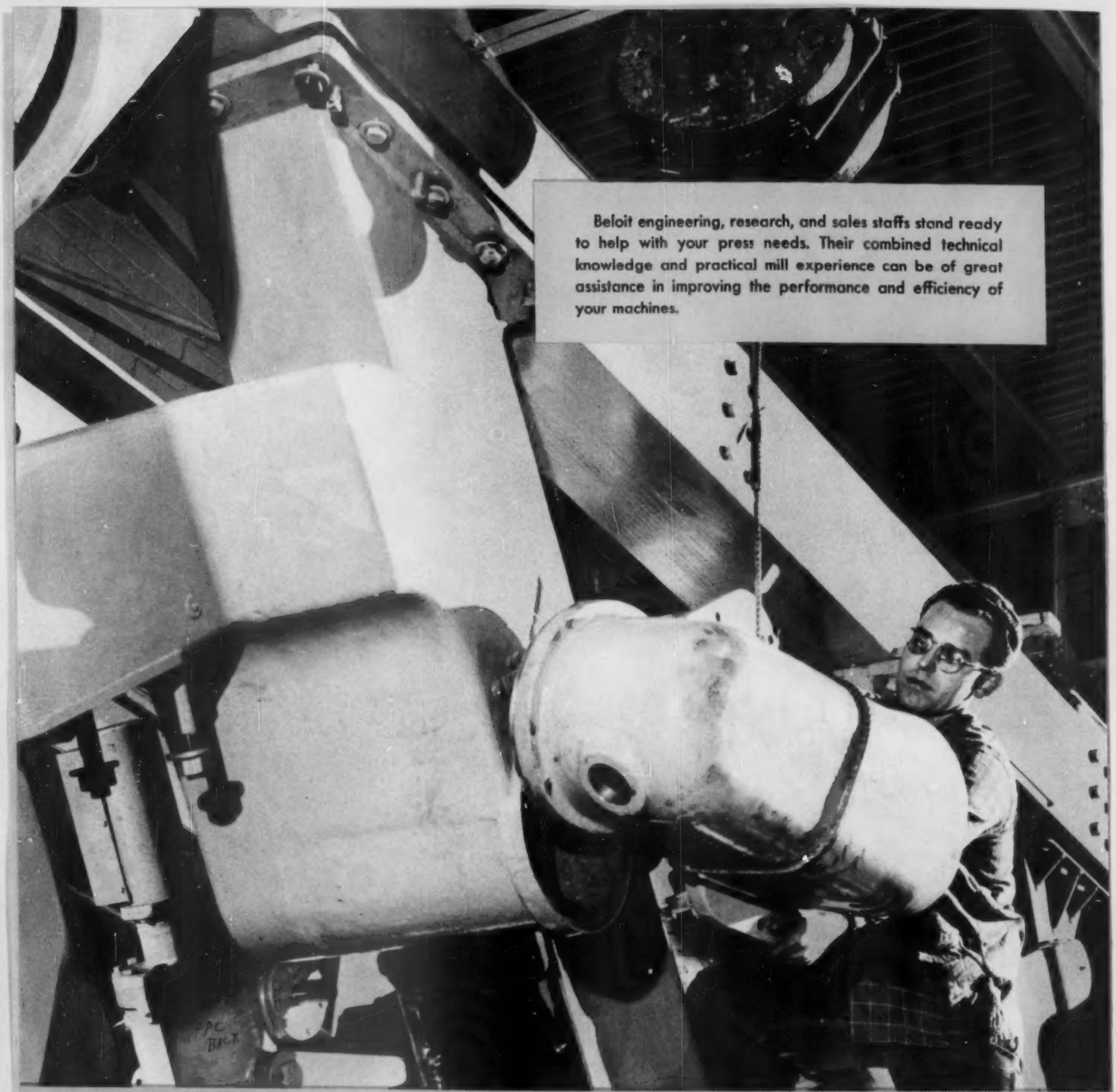
your partner in papermaking

BELOIT

PAPER MACHINERY

BELOIT IRON WORKS PAPER MACHINERY BELOIT, WIS., U.S.A.

WHEN YOU BUY BELOIT . . . YOU BUY MORE THAN A MACHINE



Beloit engineering, research, and sales staffs stand ready to help with your press needs. Their combined technical knowledge and practical mill experience can be of great assistance in improving the performance and efficiency of your machines.

J. W. MILLER

SWINGING INTO POSITION Bob Mohney, Beloit Iron Works erector, guides a second suction press vacuum connector into position on a Beloit Twinver-Press*—one of the many Beloit press arrangements designed to meet exacting requirements of the paper industry.

In recent years, press section design has received close attention. New and greatly improved designs have been evolved taking advantage of improved materials and manufacturing methods, modern pneumatic equipment, newly developed suction roll applications, and the results of continuing research. Beloit supplies all types of press sections for paper and board machines, ranging from simple open-draw types with straight-through runs to closed-draw types with special suction roll and felt arrangements.

*United States and Foreign Patents

your partner in papermaking

BELOIT

BELOIT IRON WORKS PAPER MACHINERY BELOIT, WIS., U.S.A.

WHEN YOU BUY BELOIT . . . YOU BUY MORE THAN A MACHINE

PAPER MACHINERY

CLEAR WATER
CLEAN WOOD
Quality Pulp
WEYERHAEUSER
PULP DIVISION

ENGINEERED AND BUILT BY PERKINS

for the PAPER Industry

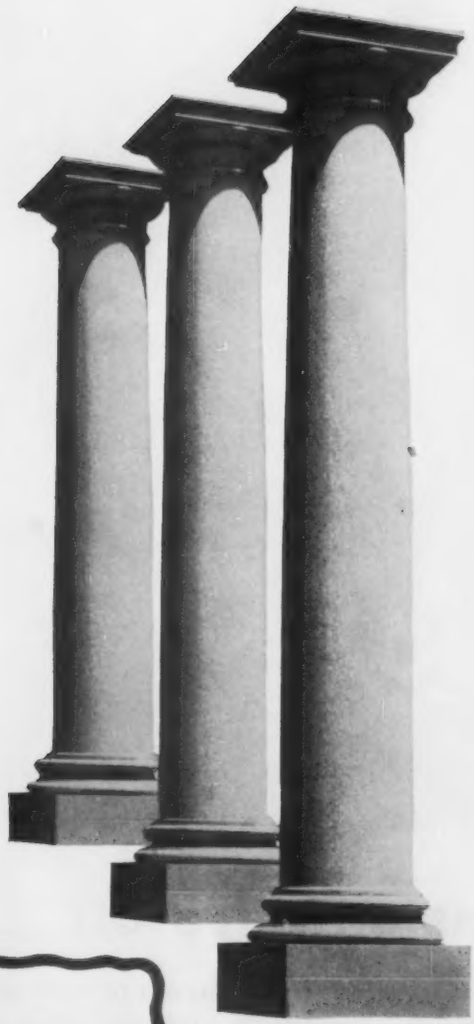
Cotton Rolls
Interleaved Rolls
Paper Rolls
Embossing Rolls
Chilled Iron Rolls
Press Rolls
Rubber&Composition Press Rolls
Glassine Super-calenders
Web Supercalenders
Friction Calenders

Ventilating Fans
Rag Cutters
Embossing Calenders
Laboratory Calenders
Paper Dampeners
Mullen Testers
Hydraulic Power Units
Special rolls and machinery to customers' specifications

B. F. PERKINS & SON, INC.
HOLYOKE • MASSACHUSETTS

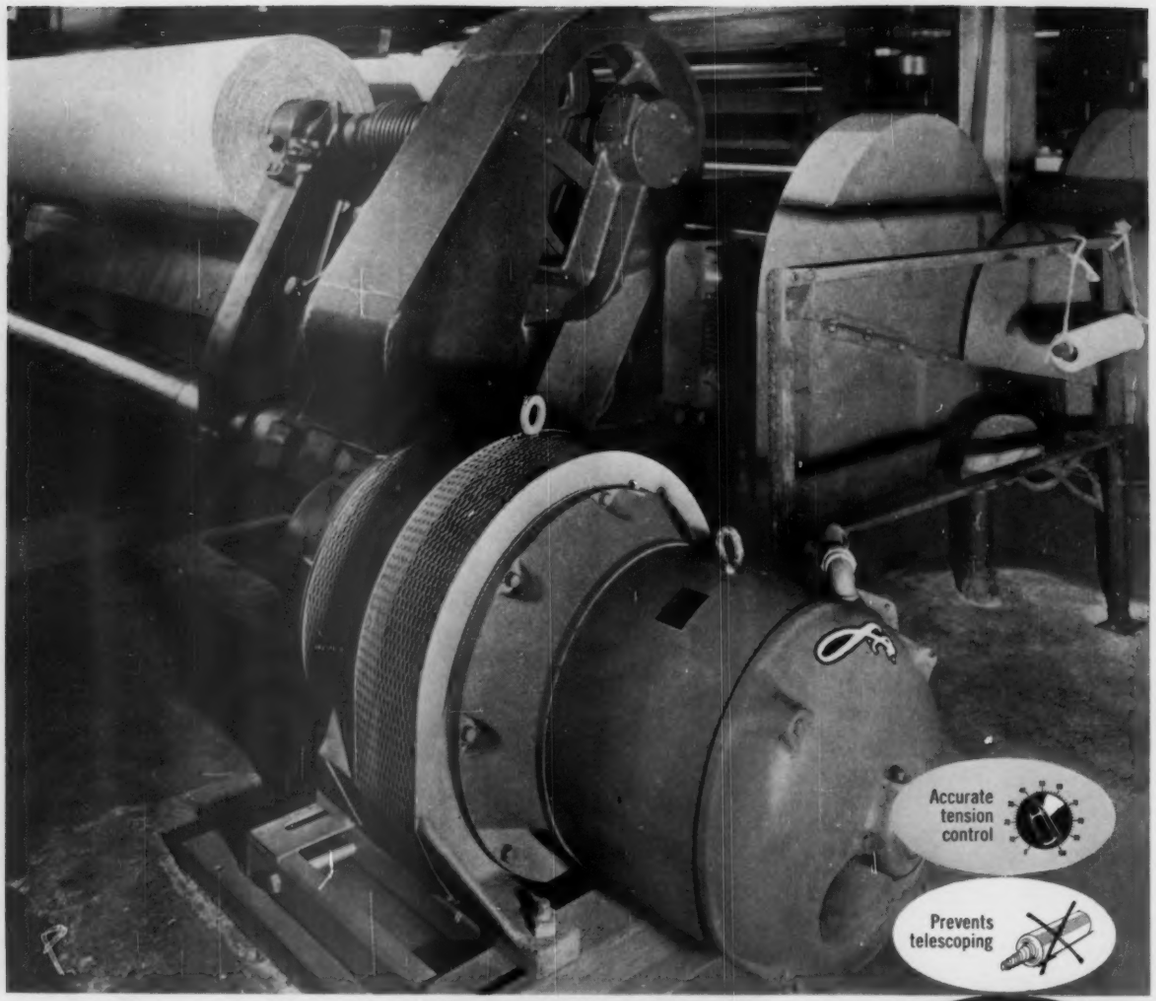
Southern Sales Offices • 1609 Liberty Life Bldg. • Charlotte, North Carolina

LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD



PUGET PULP IS STRONG

PUGET SOUND PULP and TIMBER CO.
BELLINGHAM • WASHINGTON



Where tension pays off

Louis Allis adjustable speed drives provide soft start . . . controlled acceleration . . . smooth pick-up after roll changes

Paper-winding operations (above) rely on tension . . . accurately applied. That's why you'll find Louis Allis Ajusto-Spede® drives on those center-winding operations where precise speed control saves time, paper, and handling . . . eliminates operator fatigue and its resulting inefficiencies and costly waste.

For operations requiring up to 75 hp, Ajusto-Spede® delivers the exact speed you want, when you want it. This accurate Louis Allis adjustable-speed control permits smooth speed reduction for easy "on-the-fly" roll changes . . . glides into proper tension quickly and safely. And you get the same soft-start, superior performance whether you're handling delicate tissue or heavy board stock, parchment or paper.

Here are just a few of the features of this versatile adjustable-speed drive: linear speeds from 100 to 2,000 fpm — roll build-up ratios up to 15:1 — controlled tension from ½ to 10 lbs. per inch of width — inertia compensation for maximum acceleration rates — adjustable stalled tension for smooth starts. This precise tension control means greater high-speed production . . . less downtime on windup drives in all phases of paper manufacture. Contact your nearby Louis Allis District Office or write The Louis Allis Co., 444 East Stewart Street, Milwaukee 1, Wisconsin. Ask for Bulletin No. 611E.

LOUIS ALLIS

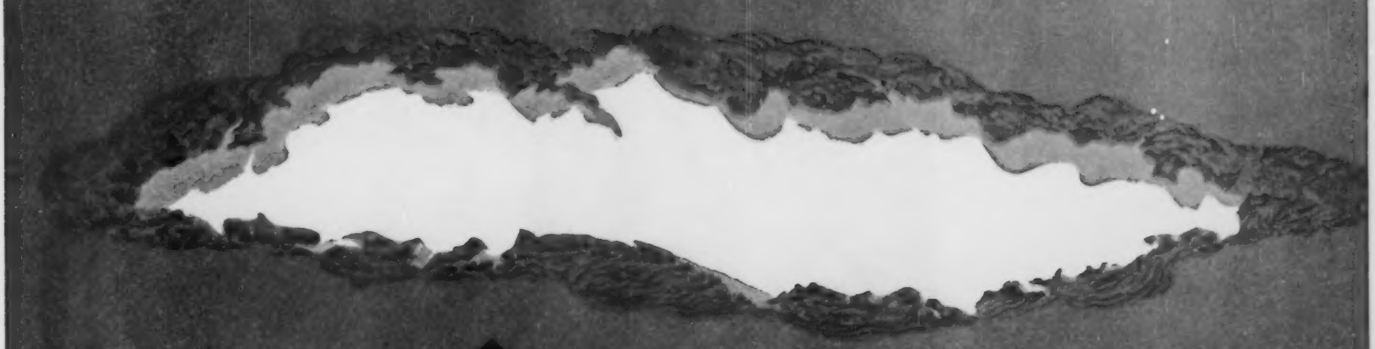
MANUFACTURER OF ELECTRIC MOTORS AND ADJUSTABLE SPEED DRIVES

2-point slime control plan

first scientific solution to the slime problem

1

Add a bacteriologist or chemist to your staff without cost!
The Technical Service Representative from United States Movidyn Corporation is university-trained, and thoroughly experienced in slime control. His job is *service* rather than selling, and he'll work with you for as long as he's needed. Using the compact mobile laboratory carried in his car (or your mill laboratory) he'll analyze and solve your slime problem under actual operating conditions—and at no additional cost to you!



2

One product can solve your slime problem economically!
No need to alternate with any other slimicides! SLIMODYN contains three powerful heavy metal toxicants for use in most white water systems. MICRODYN is specially formulated for application in paper mills where mercurials are objectionable. SLIMODYN and MICRODYN, being completely dispersible in water, are suitable for spraying after washups, and adsorb readily on surfaces to build a residual germicidal activity. They are relatively unaffected by changes in pH; will not shorten wire life or cause foaming.

For complete information, contact

UNITED STATES
Movidyn CORPORATION

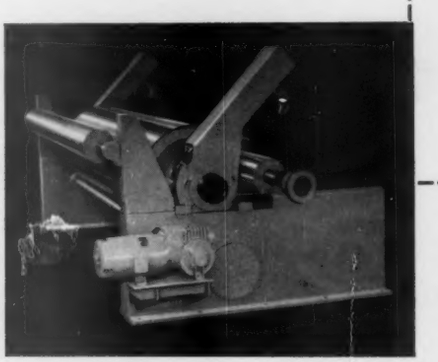
863 N. Orleans Street
Chicago 10, Illinois
Telephone WHitehall 3-1530
Cable: MOVIDYN

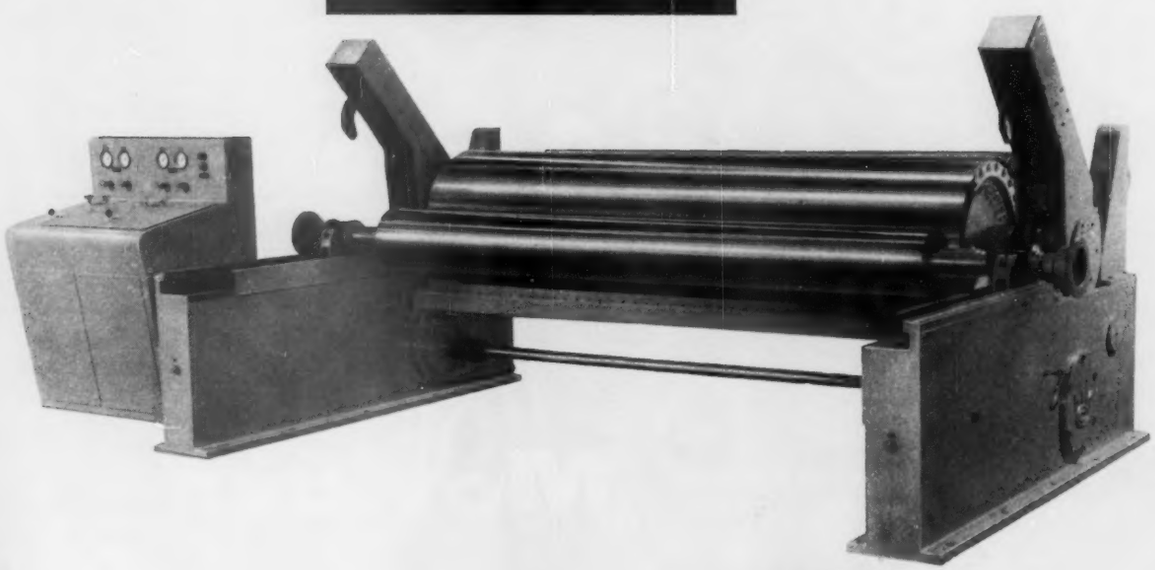
Why settle for less than uniform tight rolls?

That's what the new Manchester hydraulically controlled uniform speed reel gives you—tight rolls on every run!

CHECK THESE IMPORTANT DESIGN FEATURES:

- Winds rolls to 74" diameter or larger.
- Compact hydraulically powered unit permits centralized control of the winder by one operator.
- Automatic transfer of finished rolls to storage track.
- Primary arms and secondary bearing saddles motor operated to assure uniform roll transfer from starting position to finished winding position.
- Automatic preset tension control throughout entire operating cycle.
- Reel cores hydraulically loaded against winding drum in both primary and secondary positions.
- Drum contact loading can be adjusted during winding operations; also can be varied independently on front and back side.
- Extra heavy cast iron framing—ruggedly designed throughout.

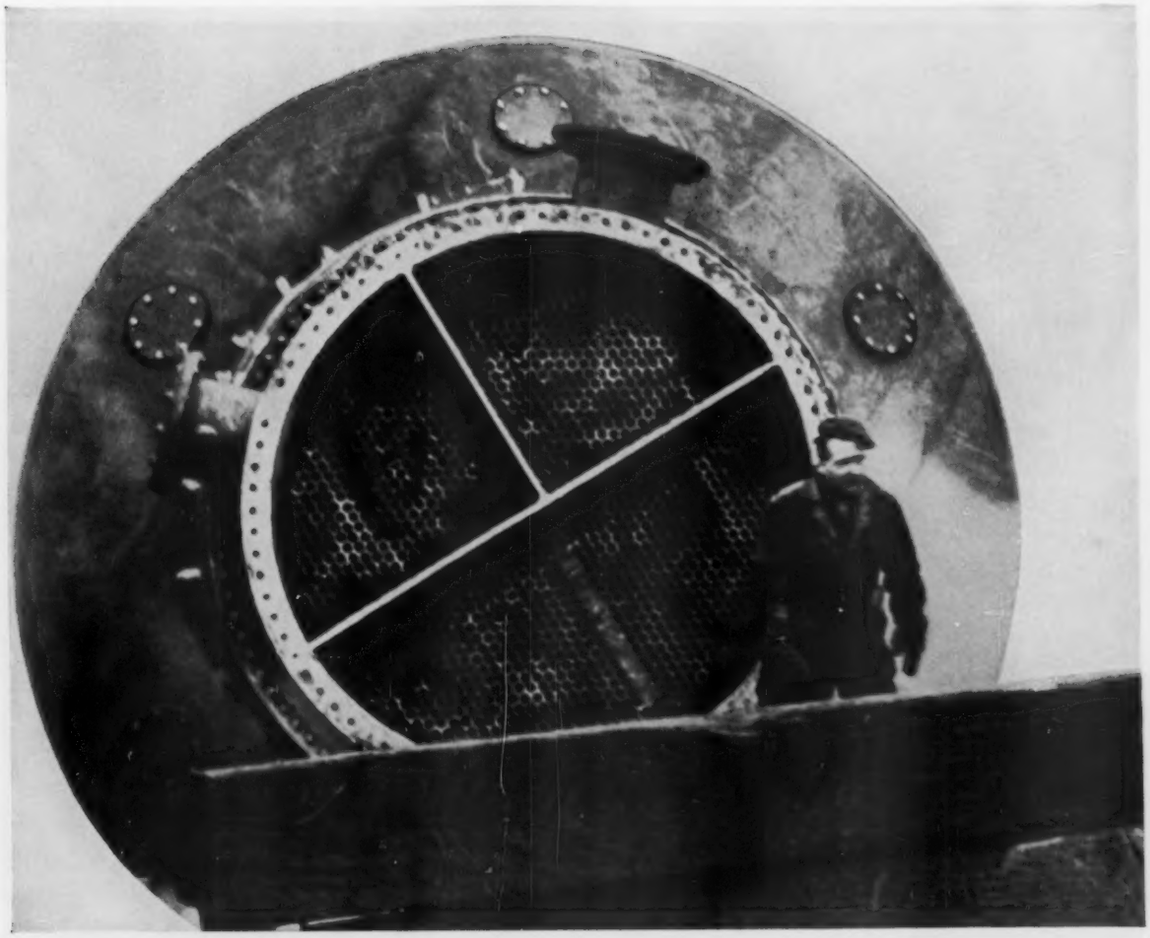




The Manchester Machine Co.
MIDDLETOWN, OHIO

MMCo

Specialists in Designing and Building Paper Mill Machinery



5½ miles of cost-saving corrosion control with *Carpenter* Stainless Tubing

Nearly 30,000 feet of Carpenter Stainless Tubing are installed in this 35-ton surface condenser specially designed for condensing blow-down steam from digesters in a paper mill.

Cost-saving, trouble-free corrosion control is only one of the many advantages you get with Carpenter Stainless Tubing. The industry's top quality control processes assure an extra measure of uniformity, quality and perfection in every shipment. Faster, easier fabrication of Carpenter Stainless Tubing makes any tubing or re-tubing job more economical.

Ask your Carpenter Distributor for full information on the new non-destructive quality control test that assures better-than-ever quality in Carpenter Stainless Tubing.

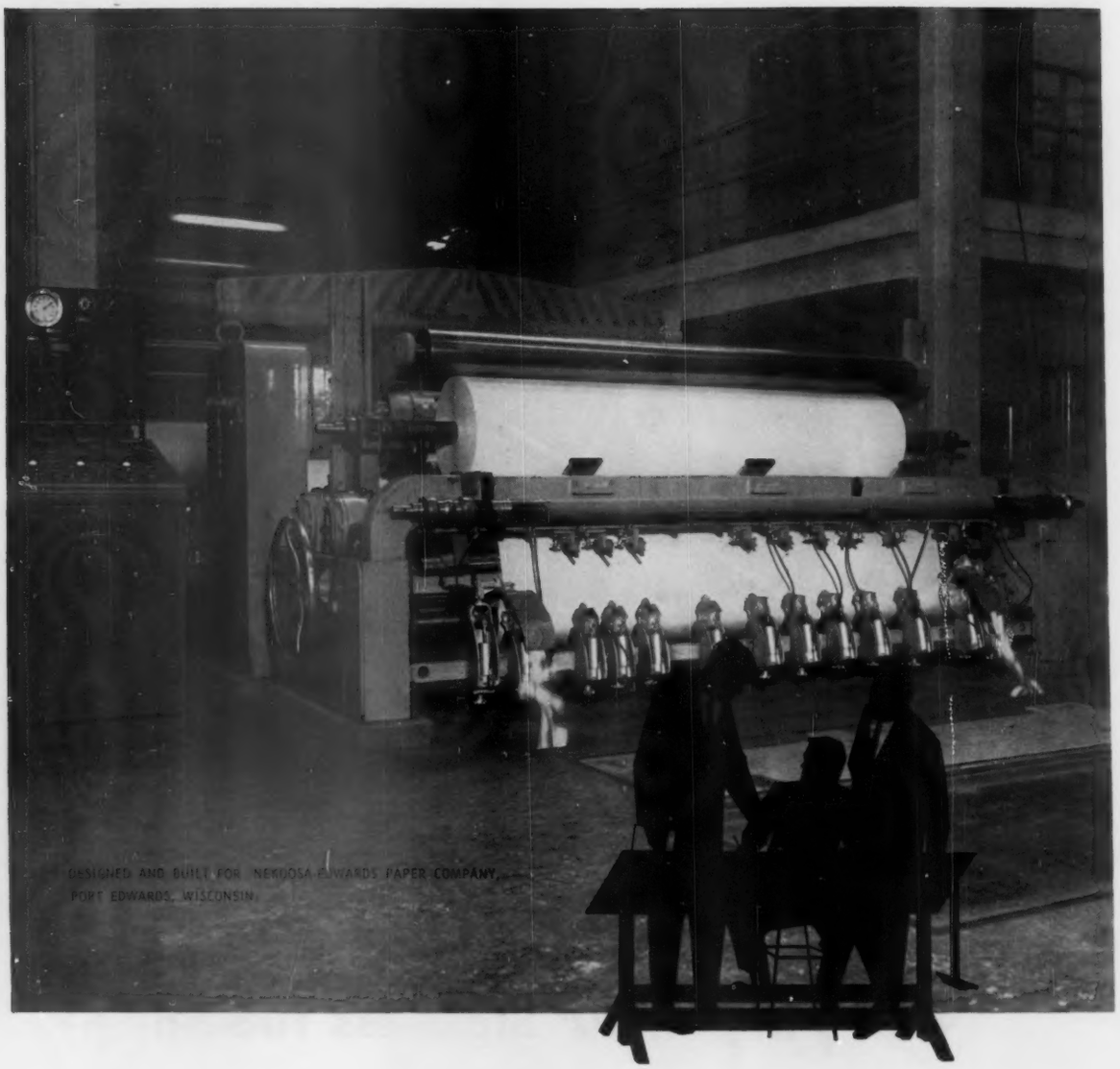
MEMBER

The Carpenter Steel Company
Alloy Tube Division, Union, N. J.

Export Dept.: The Carpenter Steel Co., Port Washington, N. Y.—"CARSTEELCO"

Carpenter

Stainless Tubing & Pipe



Designing and building only the best

Vibration-free operation . . . accurate, uniform slitting and winding of converter rolls . . . automatic controls for efficient performance! Rigid requirements to meet, so the Appleton Machine Company was selected to do the job.

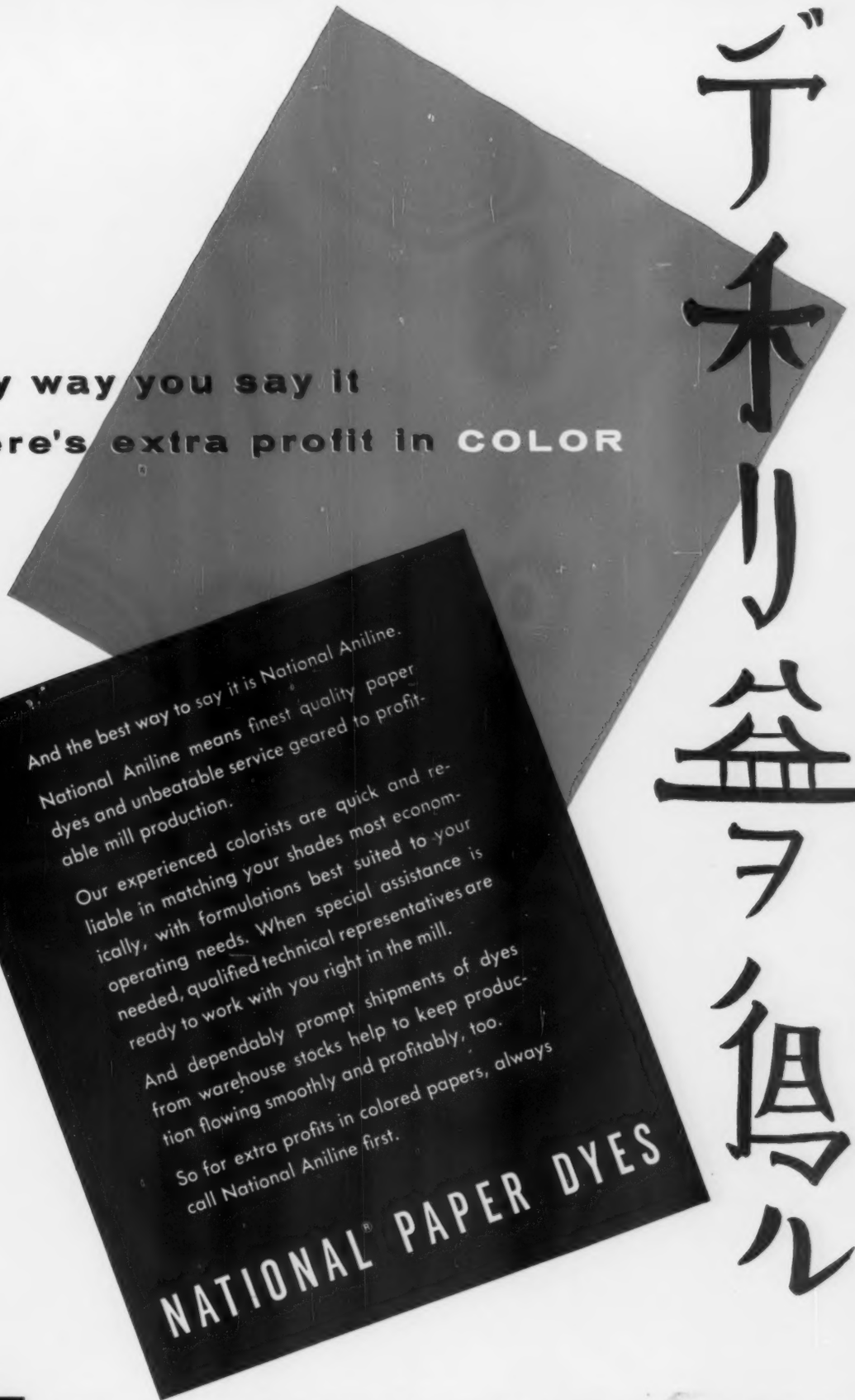
And from Appleton's experienced design and production staff comes the most compact, low contour "push-button" winder available. The entire operation of this precision winder is pre-set. It requires only minimum attention by the operator. Custom-designed, custom-built, of course!

Ask your Appleton representative about the unusually efficient performance of this "push-button" winder with low center of gravity next time he calls.

KNOWING AND FILLING
THE NEEDS OF THE PAPER INDUSTRY

APPLETON MACHINE COMPANY

APPLETON, WISCONSIN



any way you say it
there's extra profit in COLOR

And the best way to say it is National Aniline. National Aniline means finest quality paper dyes and unbeatable service geared to profitable mill production.

Our experienced colorists are quick and reliable in matching your shades most economically, with formulations best suited to your operating needs. When special assistance is needed, qualified technical representatives are ready to work with you right in the mill.

And dependably prompt shipments of dyes from warehouse stocks help to keep production flowing smoothly and profitably, too.

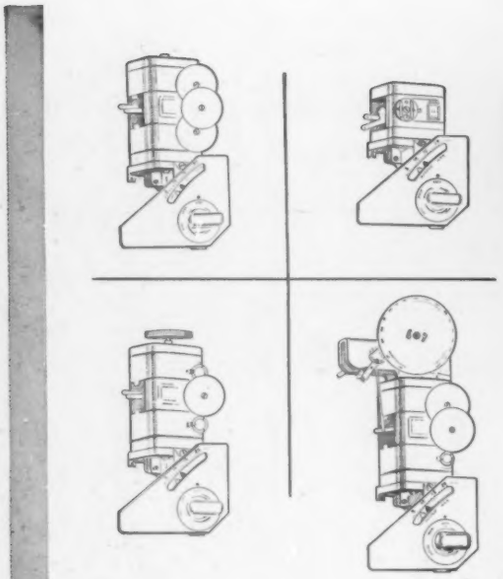
So for extra profits in colored papers, always call National Aniline first.

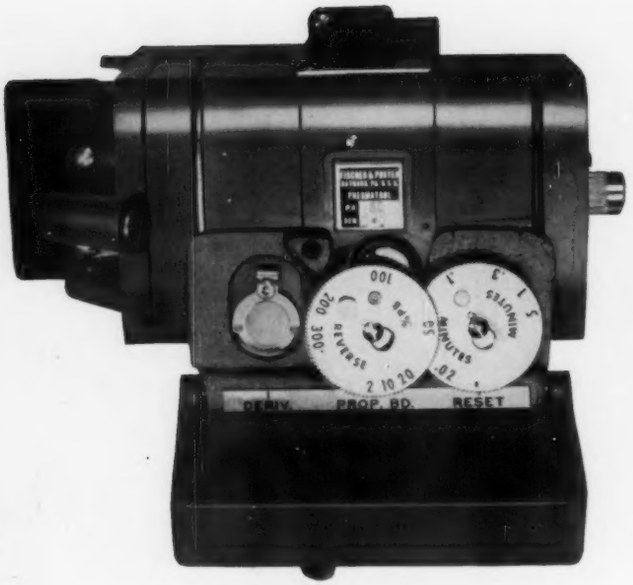
NATIONAL® PAPER DYES

デネリ益ヲ倘ル

NATIONAL ANILINE DIVISION ALLIED CHEMICAL & DYE CORPORATION • 40 RECTOR ST. NEW YORK 6, N. Y.

Akron Atlanta Boston Charlotte Chattanooga Chicago Columbus, Ga. Greensboro Los Angeles New Orleans Philadelphia Portland, Ore. Providence Richmond San Francisco Toronto





NOW . . . the P-4 controller is better than ever!

Back from a thorough redesign, the P-4 has more to offer than ever before. All the advantages proved in years of actual use have been retained . . . and more have been added. Chief among the improvements resulting from this complete re-evaluation are:

- Even *lower* steady state air consumption—and increased amplifying relay capacity
- Improved linearity plus increased gain in the error detection network
- Greater independence from dirty air supply
- Easily accessible external alignment adjustments
- Improved frequency response characteristics
- Greater flexibility—new "Universal" design provides 2-50% proportional action, on-off controller action, 2-100% differential gap action—in *one controller!*

Brilliant instrument design has permitted all these improvements with no change in bellows construction or motion balance principle of operation. In-case models still feature completely integrated *in-the-case* accessories, free of troublesome links or complex external members. And they can still be mounted left or right with equal ease, permitting two to a single case if desired. Of course, a complete line of plug-in models for use with miniature instruments is still available.

If you'd like to investigate the renewed P-4B controller first hand, call in the Fischer & Porter field engineer serving you . . . or write for new Catalog 53P-4000 to Fischer & Porter Co., 2217 County Line Road, Hatboro, Pa. In Canada, write Fischer & Porter (Canada) Ltd., 2700 Jane Street, Toronto, Ontario.

PERFORMANCE SPECIFICATIONS • SERIES 53P—P-4B CONTROLLERS

Output pressure—*3 to 15 or 3 to 18 psig*

Set point and process pressures for field or plug-in models—*3 to 15 psig*

Index tracking at any output pressure—*within 1% of scale (Reset controller)*

Temperature limit—*225 F*

Supply pressure—*17 to 22 psig*

Zero frequency gain (Reset controller)—*approximately 300*

Derivative gain—*approximately 12*

Field mounting manifold cut-off valve—*air to open*

Steady state air consumption—*0.08 scfm*

	In Case Controllers	Plug-In And Field Mounted
On-off	53PR 4101	
"Universal" controller; 2-50% proportional, on-off, and 2-100% differential gap	53PR 4241	53PN 4240
Proportional only	53PR 4301	53PN 4300
Proportional plus fast derivative	53PR 4411	53PN 4410
Proportional plus slow derivative	53PR 4421	53PN 4420
Proportional plus fast reset	53PR 4511	53PN 4510
Proportional plus slow reset	53PR 4521	53PN 4520
Proportional plus fast derivative plus fast reset	53PR 4611	53PN 4610
Proportional plus fast derivative plus slow reset	53PR 4631	53PN 4630
Proportional plus slow derivative plus slow reset	53PR 4621	53PN 4620
Ratio—Proportional plus fast reset	53PP 4511	

FP

FISCHER & PORTER CO.
Complete Process Instrumentation

For an excellent

MOISTURE BARRIER

coat with

PETROTHENE®

POLYETHYLENE RESIN

Details on Back

Polyethylene because of its low cost, high water vapor resistance, and excellent heat sealing properties, is becoming more and more popular for moisture barrier applications. It coats practically everything used for flexible packaging of industrial or consumer items. It adheres tightly to papers, fabrics, films and foils. It adds strength, too.

Petrothene paper coating resins have these advantages over many other polyethylenes . . .

- ✓ **HIGHER PRODUCTION RATES**
- ✓ **EXCELLENT ADHESION**
- ✓ **NO ODOR**

Want to learn more about Petrothene? Mail the coupon below.

Polyethylene coatings add strength and moisture resistance in packaging

- chemicals
- cosmetics
- drugs
- foods
- hardware
- industrial parts
- machinery
- textiles
- tobacco
- and many others

U.S.I. INDUSTRIAL CHEMICALS CO.

Division of National Distillers and Chemical Corporation

99 Park Avenue, New York 16, N. Y.

I would like more information on PETROTHENE Polyethylene.

My application is _____

Please ☐ send literature

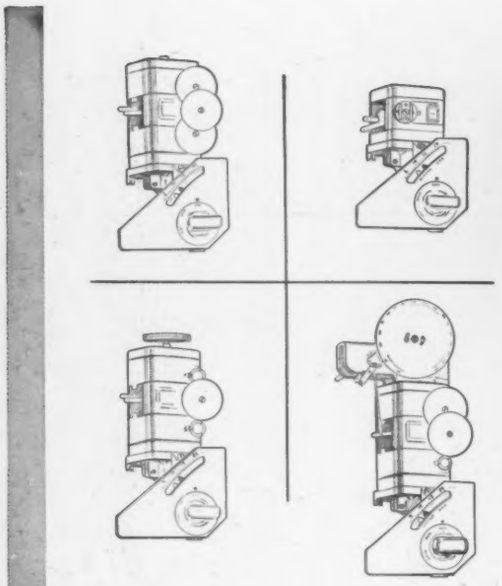
☐ ask a technical representative to call.

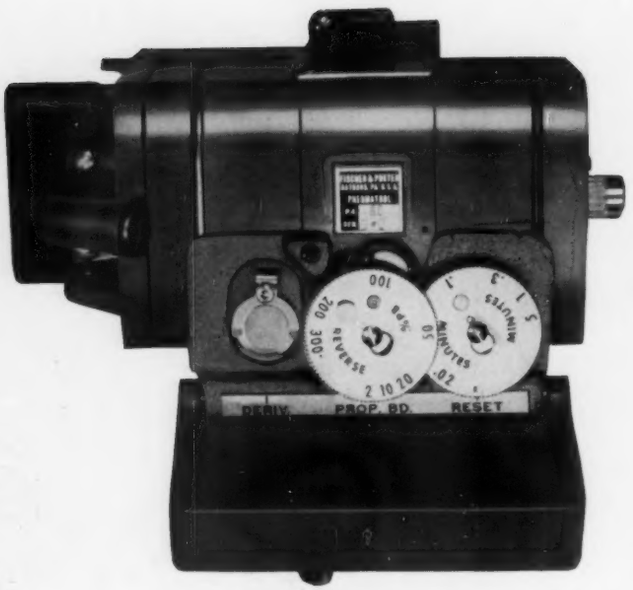
NAME _____

TITLE _____

COMPANY _____

ADDRESS _____





NOW . . . the P-4 controller is better than ever!

Back from a thorough redesign, the P-4 has more to offer than ever before. All the advantages proved in years of actual use have been retained . . . and more have been added. Chief among the improvements resulting from this complete re-evaluation are:

- Even *lower* steady state air consumption—and increased amplifying relay capacity
- Improved linearity plus increased gain in the error detection network
- Greater independence from dirty air supply
- Easily accessible external alignment adjustments
- Improved frequency response characteristics
- Greater flexibility—new "Universal" design provides 2-50% proportional action, on-off controller action, 2-100% differential gap action—in *one controller!*

Brilliant instrument design has permitted all these improvements with no change in bellows construction or motion balance principle of operation. In-case models still feature completely integrated *in-the-case* accessories, free of troublesome links or complex external members. And they can still be mounted left or right with equal ease, permitting two to a single case if desired. Of course, a complete line of plug-in models for use with miniature instruments is still available.

If you'd like to investigate the renewed P-4B controller first hand, call in the Fischer & Porter field engineer serving you . . . or write for new Catalog 53P-4000 to Fischer & Porter Co., 2217 County Line Road, Hatboro, Pa. In Canada, write Fischer & Porter (Canada) Ltd., 2700 Jane Street, Toronto, Ontario.

PERFORMANCE SPECIFICATIONS • SERIES 53P—P-4B CONTROLLERS

Output pressure—*3 to 15 or 3 to 18 psig*

Set point and process pressures for field or plug-in models—*3 to 15 psig*

Index tracking at any output pressure—*within 1% of scale (Reset controller)*

Temperature limit—*225 F*

Supply pressure—*17 to 22 psig*

Zero frequency gain (Reset controller)—*approximately 300*

Derivative gain—*approximately 12*

Field mounting manifold cut-off valve—*air to open*

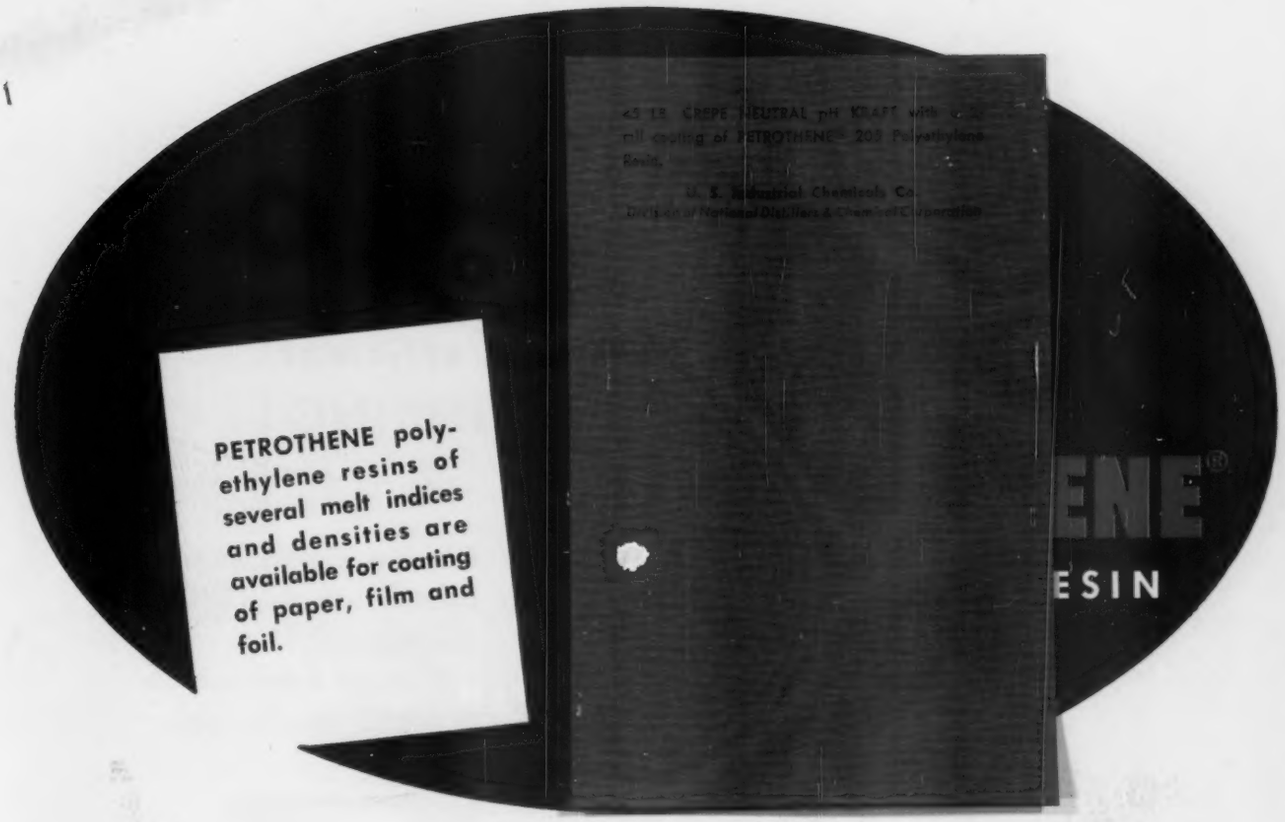
Steady state air consumption—*0.08 scfm*

	In Case Controllers	Plug-In And Field Mounted
On-off	53PR 4101	
"Universal" controller; 2-50% proportional, on-off, and 2-100% differential gap	53PR 4241	53PN 4240
Proportional only	53PR 4301	53PN 4300
Proportional plus fast derivative	53PR 4411	53PN 4410
Proportional plus slow derivative	53PR 4421	53PN 4420
Proportional plus fast reset	53PR 4511	53PN 4510
Proportional plus slow reset	53PR 4521	53PN 4520
Proportional plus fast derivative plus fast reset	53PR 4611	53PN 4610
Proportional plus fast derivative plus slow reset	53PR 4631	53PN 4630
Proportional plus slow derivative plus slow reset	53PR 4621	53PN 4620
Ratio—Proportional plus fast reset	53PP 4511	

FP

FISCHER & PORTER CO.

Complete Process Instrumentation


PETROTHENE polyethylene resins of several melt indices and densities are available for coating of paper, film and foil.

Polyethylene because of its low cost, high water vapor resistance, and excellent heat sealing properties, is becoming more and more popular for moisture barrier applications. It coats practically everything used for flexible packaging of industrial or consumer items. It adheres tightly to papers, fabrics, films and foils. It adds strength, too.

Petrothene paper coating resins have these advantages over many other polyethylenes . . .

- ✓ **HIGHER PRODUCTION RATES**
- ✓ **EXCELLENT ADHESION**
- ✓ **NO ODOR**

Want to learn more about Petrothene? Mail the coupon below.

Polyethylene coatings add strength and moisture resistance in packaging

- chemicals
- cosmetics
- drugs
- foods
- hardware
- industrial parts
- machinery
- textiles
- tobacco
- and many others

U.S.I. INDUSTRIAL CHEMICALS CO.
Division of National Distillers and Chemical Corporation
99 Park Avenue, New York 16, N. Y.

I would like more information on PETROTHENE Polyethylene.

My application is _____

Please ☐ send literature

☐ ask a technical representative to call.

NAME _____

TITLE _____

COMPANY _____

ADDRESS _____

use **d-i LESTOIL**
LIQUID DETERGENT

for fast, efficient
DE-INKING

Pulp from de-inked waste paper, processed with d-i LESTOIL will give you
1. ECONOMY in raw stock cost
2. QUALITY in finished paper

d-i LESTOIL
effectively de-inks newsprint, magazine, ledger and mixed papers. Inks are completely emulsified and dispersed — become part of and float out with the water.

d-i LESTOIL
requires no new equipment—no change in your present methods. It is used in the kier boiler, washer, beater or pulper.

d-i LESTOIL
makes fibres free-flowing —
keeps wires, felts and systems clean —
felts stay soft and porous —
costly shutdowns are drastically reduced.

d-i LESTOIL
produces fibres that are immaculately clean—resulting in a clearer and stronger sheet of paper of uniform color and quality.

DON'T DELAY ORDER TODAY

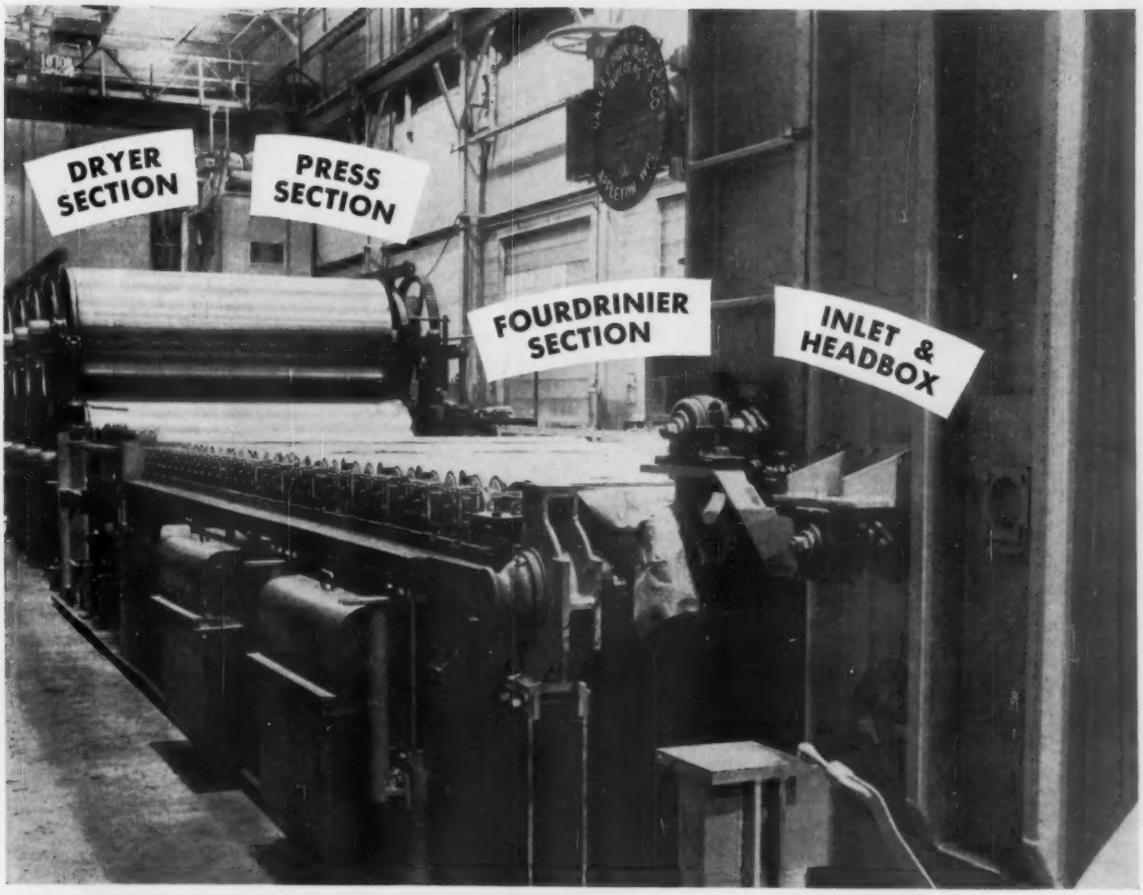
We are so sure that d-i LESTOIL can do a DE-INKING job better than anything else that we are inviting you to try it — cost free — underyour own particular conditions.

For complete technical information and generous free sample write to:

ADELL *Chemical Company*
HOLYOKE, MASSACHUSETTS

another

PAPER MACHINE REBUILD.....



completely designed,

engineered and built by... **VALLEY**

VALLEY IRON WORKS CO. APPLETON, WISCONSIN

Canadian Representatives: Pulp and Paper Mill Accessories Ltd., P.O. Box 903, Station "O" Montreal 9, Quebec

POWELL RIVER UNBLEACHED SULPHITE PULP

★STRENGTH

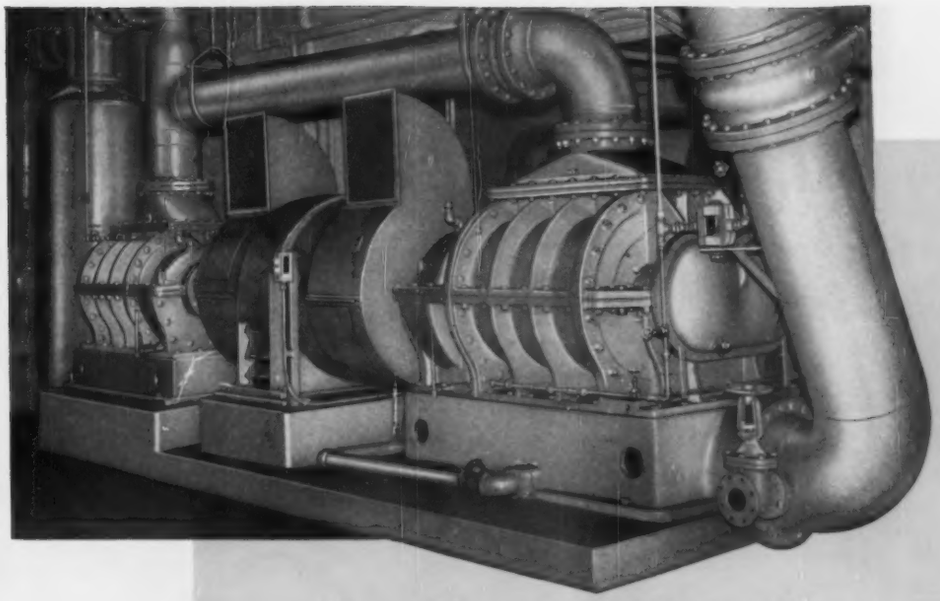
★COLOR

★CLEANLINESS

★SERVICE

★DEPENDABLE SUPPLY

★POWELL RIVER SALES COMPANY LIMITED
STANDARD BUILDING VANCOUVER, B. C.



For the world's largest Yankee tissue machine...

R-C Vacuum Pumps keep production rolling at 3000 fpm

At Crown Zellerbach Corporation's St. Helens mill in Oregon, the world's largest Yankee tissue machine, with a 258-inch wire, is producing 100 to 120 tons per day at a speed of 3000 fpm.

To provide the required vacuum for the pressure roll, suction wire boxes, wringer roll, suction couch, pickup and felt conditioners, there are seven Roots-Connersville vacuum pumps to supply approximately 33,000 cfm of air at 10 to 20" Hg vacuum.

Five important operating factors have proved the performance of these R-C Positive Displacement Vacuum Pumps:

- *Reduced horsepower at higher speeds* (600 rpm and up) creates power savings up to 25% and far lower first cost of motors.
- *Single-stage or two-stage units* in capacities for all requirements.
- *Proved reliability and low maintenance* with no internal contacts or excessive wear and freedom from down-time and maintenance.
- *Minimum sealing water* from 4 to 40 gpm, unaffected by water temperature.
- *Small floor space* with less expensive foundations and lower cost per cubic foot of capacity.

R-C Positive Displacement Vacuum Pumps purchased for this installation

- Two 16 x 40 single-stage pumps
- One 14 x 35 single-stage pump
- Two 20 x 40 x 20 x 16 two-stage pumps

The 14 x 35 single-stage unit is direct-connected to a special shaft extension from one of the 16 x 40 units to make a two-stage compound pump.

For evidence of how other leading industrial users benefit from these advantages, write for Bulletin 50-B-13.

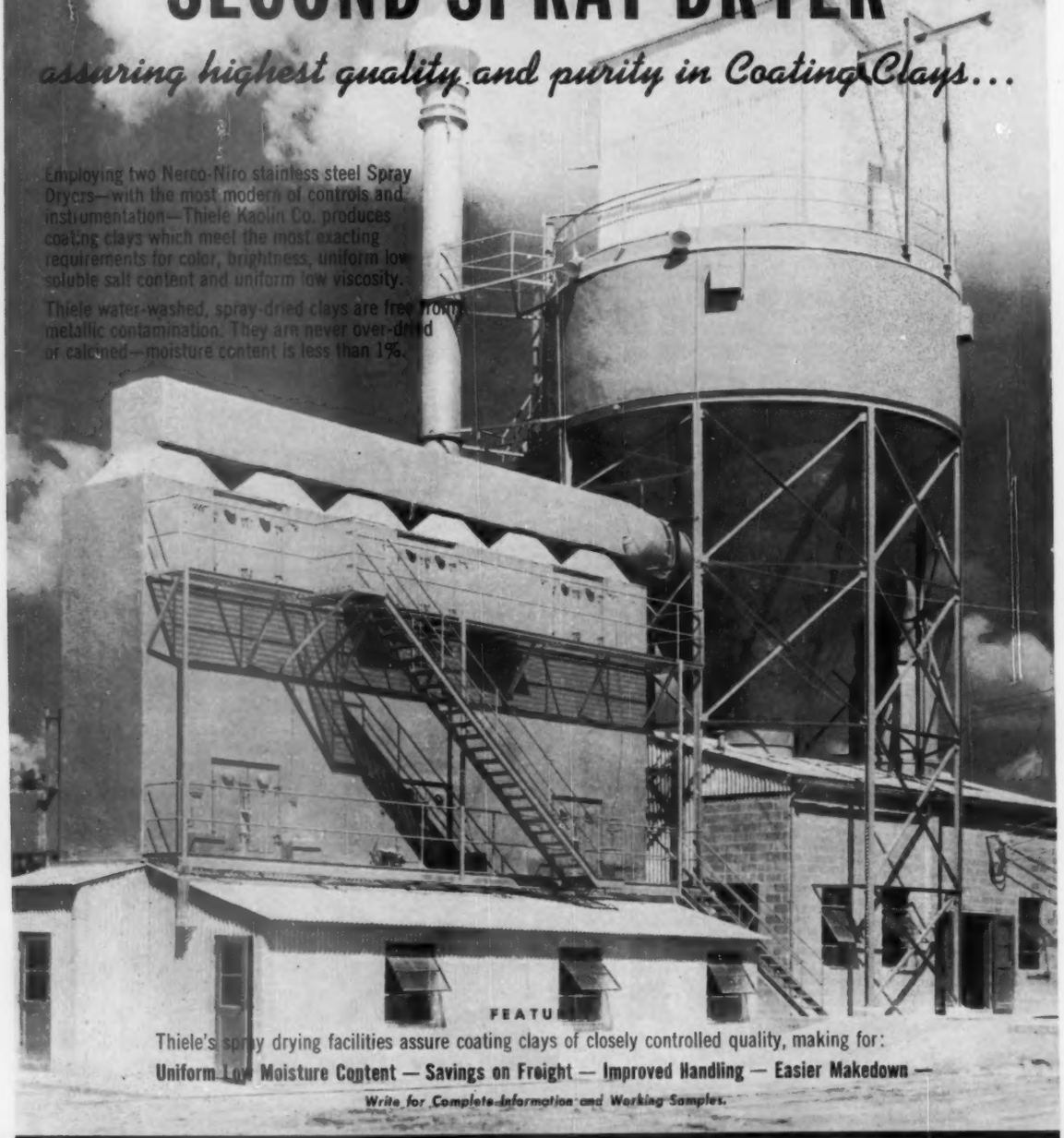
ROOTS-CONNERSVILLE BLOWER

A DIVISION OF DRESSER INDUSTRIES, INC.

1157 Willow Ave., Connersville, Indiana. In Canada—629 Adelaide St., W., Toronto, Ont.

THIELE KAOLIN CO. ADDS SECOND SPRAY DRYER

assuring highest quality and purity in Coating Clays...



Employing two Nerco-Niro stainless steel Spray Dryers—with the most modern of controls and instrumentation—Thiele Kaolin Co. produces coating clays which meet the most exacting requirements for color, brightness, uniform low soluble salt content and uniform low viscosity.

Thiele water-washed, spray-dried clays are free from metallic contamination. They are never over-dried or calcined—moisture content is less than 1%.

FEATU

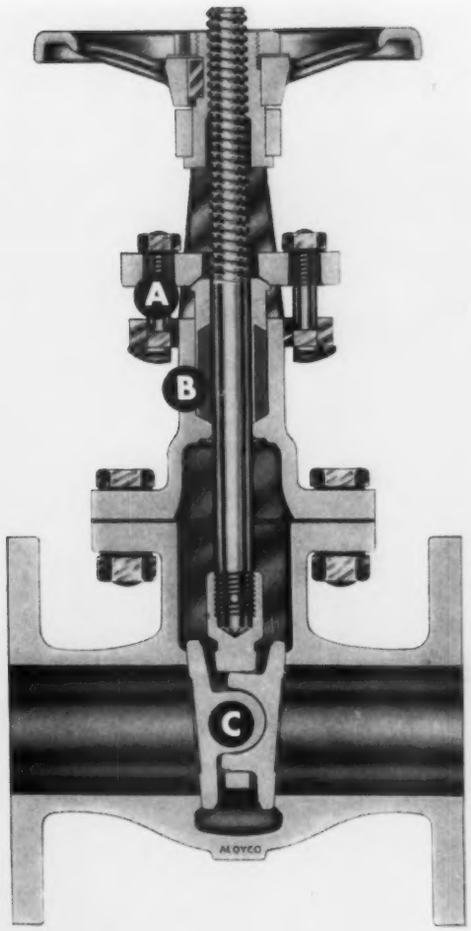
Thiele's spray drying facilities assure coating clays of closely controlled quality, making for:

Uniform Low Moisture Content — Savings on Freight — Improved Handling — Easier Makedown —

Write for Complete Information and Working Samples.

Thiele Kaolin Company

P. O. BOX 270 · SANDERSVILLE, GA.



ALOYCO 111 GATE VALVE

***Advanced features* of these valves increase their corrosion-resistance**

- Double disk ball-and-socket type wedges are free to rotate and are non-fouling in any position to assure pressure tightness on both seats.
- Stuffing boxes may be repacked with Teflon or conventional packing material even when valve is under pressure and wide open.
- Rocker type gland plates and guided gland followers prevent marring of the stems when repacking.
- Handwheels keyed to yoke-bushings for easy disassembly.
- All parts of corrosion-resistant alloy except yoke-bushings, yoke-bushing nuts and handwheels. Available from ½" to 12".
- Valves also available in other alloys in accordance with service requirements.

7.20

This Aloyco 18 8SMO Stainless Steel valve cuts maintenance costs in corrosive service

• Prevent valve corrosion from eating into your production and profits!

How? Look to Aloyco, the world's largest specialists in the manufacture of corrosion-resistant valves, for the valve design and alloy that will give lasting, maintenance-free performance.

Mechanically, this Aloyco Gate Valve 111 is evidence of the careful attention given every detail of construction that marks Aloyco's complete line. To determine the best materials for each specific application, our engineers will be glad to pre-test various alloys under your actual line conditions and base their recommendations on actual service data.

If you have a problem of valve maintenance or replacement because of corrosion, write to Aloyco's Corrosion Engineering Service about your own valve needs. Or call your nearest Aloyco distributor.

A. Rocker type gland plates and gland followers.

B. Teflon packing for stuffing box (optional).

C. Double disk, ball-and-socket type wedges.

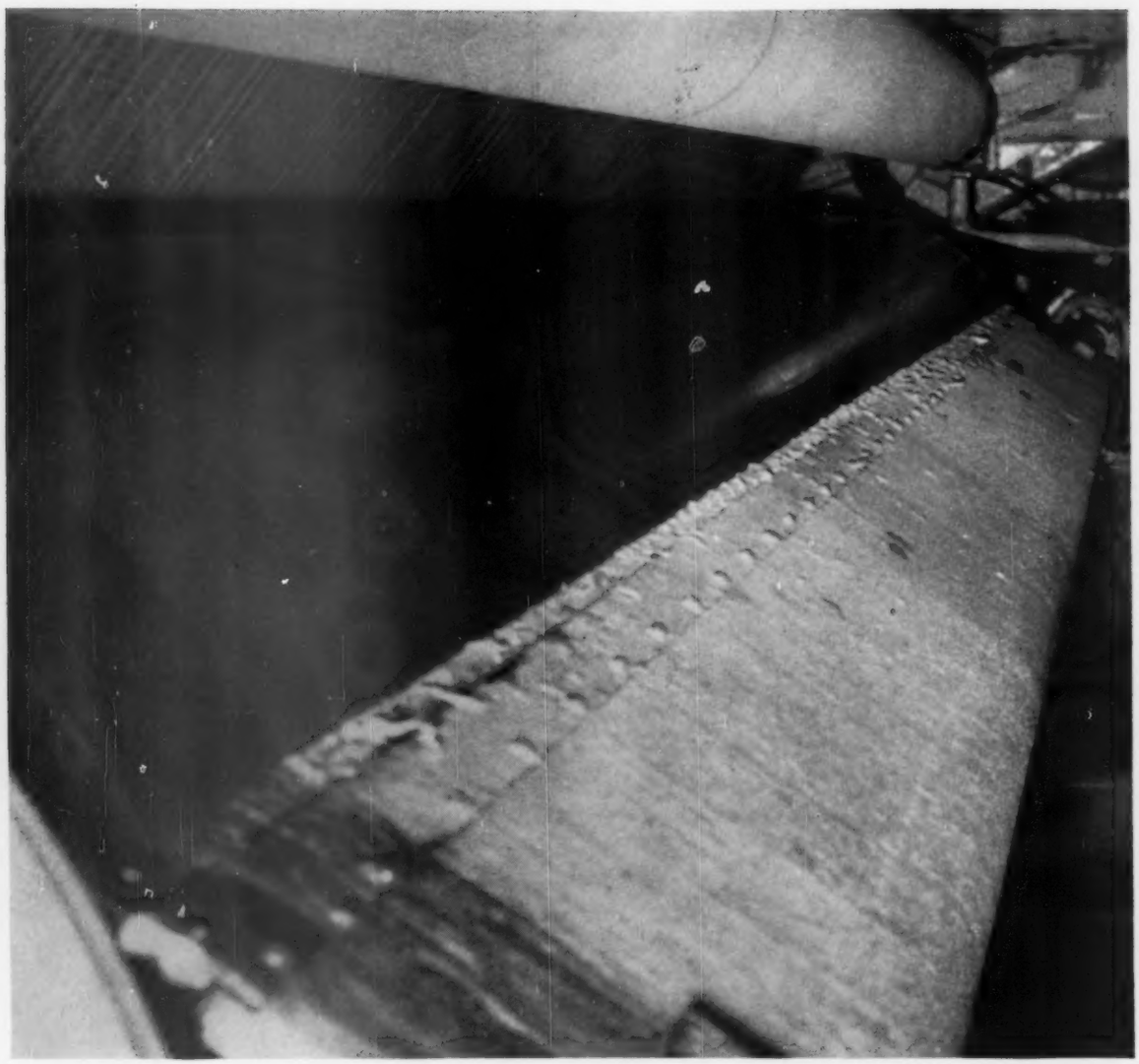
ALOYCO 18 8SMO

The further alloying of Aloyco 18-8S with molybdenum widens its field of usefulness. This enables the alloy not only to resist oxidizing solutions but also increases its resistance to reducing agents and decreases its tendency toward pitting. This alloy is widely used in the sulfite pulp industry and in processing of phosphoric acid and its derivatives.

ALLOY STEEL PRODUCTS COMPANY

1316 West Elizabeth Avenue, Linden, New Jersey

PLANTS: Linden, N. J.; Bloomfield, N. J.; Elizabeth, N. J.



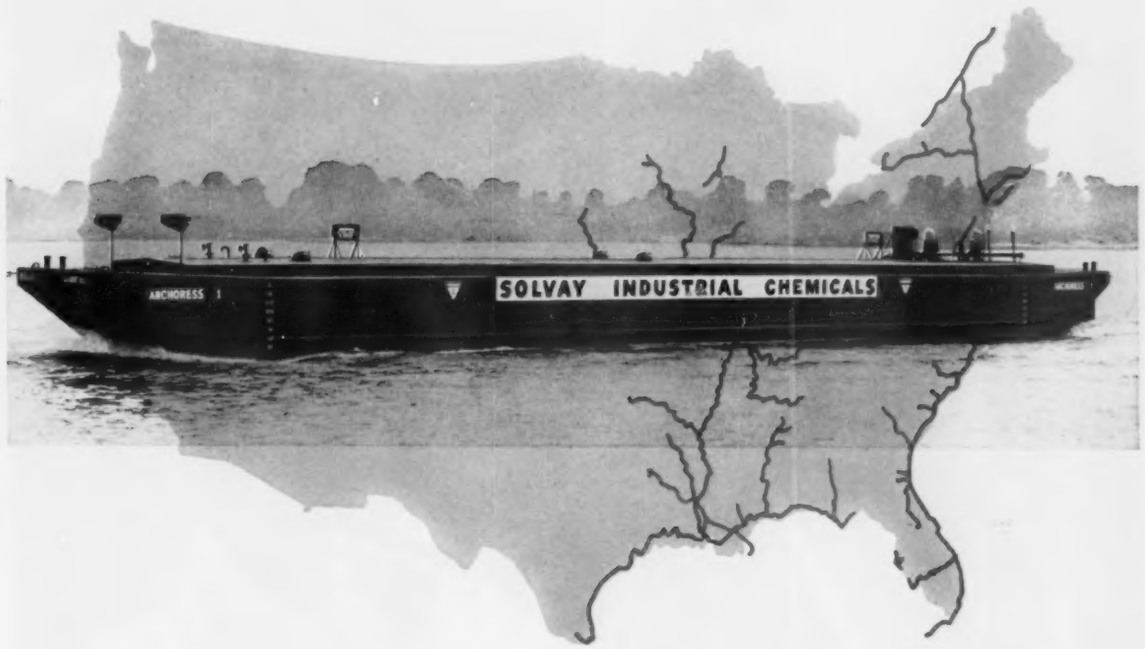
no wonder it's a Stowe-Woodward roll...

Every square inch . . . every surface fiber of the paper web shown must come in contact with this rubber covered roll. This roll, so critical in its use and manufacture, must be firm enough to extract the maximum amount of water from the web. It must be so gentle that it will not crush paper, or injure the felt; so smooth that it will impart its fine finish to the paper; and so carefully compounded chemically and from the standpoint of density and surface that it will press and release the sheet quickly and cleanly, without sticking or picking. No wonder the large majority of America's leading mills will settle for nothing less than the best rubber covered rolls from Stowe-Woodward, Inc.

Complete roll processing plants at:
NEWTON UPPER FALLS, MASS.
NEENAH, WISCONSIN
GRIFFIN, GEORGIA

STOWE-WOODWARD, Inc.
Craftsmen in rubber
RUBBER ROLLS with a REPUTATION

MEET SOLVAY'S NEWEST AND LARGEST "PACKAGE"!



SOLVAY

SOLVAY's spanking new voyager of the waterways – the 175-foot, 700-ton capacity *Anchoress* now in liquid caustic soda service out of our Brunswick, Georgia, plant – is truly the newest and largest "package" in the SOLVAY line.

SOLVAY's packages range from cartons and multi-wall paper bags, through steel, aluminum, fiber and wooden containers, to great fleets of specialized hopper and tank cars. Each of these packages is devised for the particular product it is to carry.

Efficient, economical and safe packaging and delivery are typical of the numerous services that cause so many buyers to specify SOLVAY.

SOLVAY PROCESS DIVISION

Allied Chemical

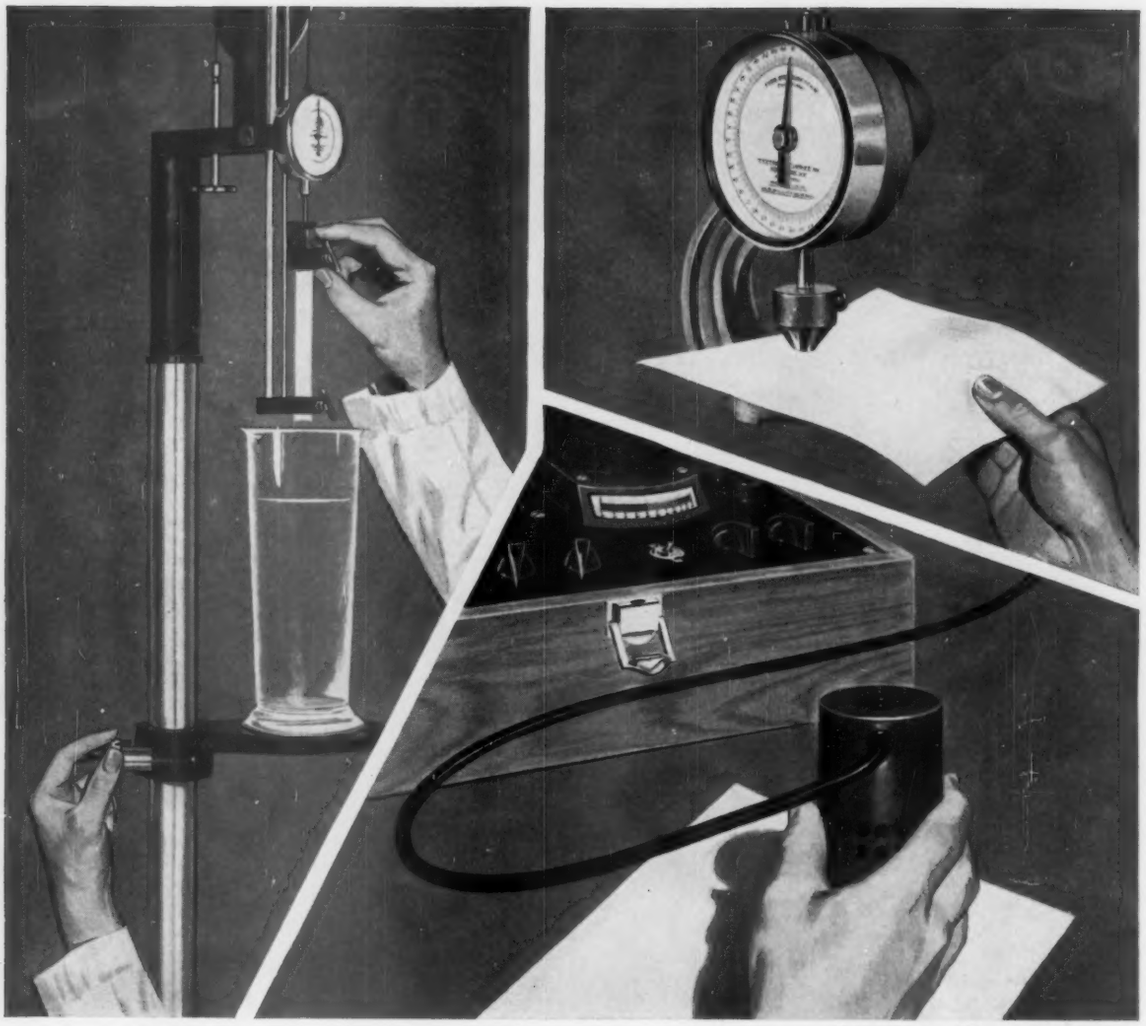
ALLIED CHEMICAL & DYE CORPORATION

61 Broadway, New York 6, N. Y.

BRANCH SALES OFFICES:

Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit
Houston • New Orleans • New York • Philadelphia • Pittsburgh
St. Louis • Syracuse

Soda Ash • Snowflake® Crystals • Potassium Carbonate • Calcium Chloride • Ammonium Bicarbonate • Sodium Bicarbonate • Cleaning Compounds
Caustic Potash • Methyl Chloride • Ortho-dichlorobenzene • Monochlorobenzene • Chloroform • Sodium Nitrite • Chlorine • Caustic Soda • Vinyl Chloride
Para-dichlorobenzene • Ammonium Chloride • Aluminum Chloride • Carbon Tetrachloride • Methylene Chloride • Hydrogen Peroxide



Photos Courtesy TESTING MACHINES, INC.

What paper quality do you want?

...SOLKA® Pulp

will help you!

Brightness? Opacity? Bulk? Dimensional stability? You name the quality—and there's a SOLKA Pulp *to help you achieve it!*

America's leading paper manufacturers have depended on Brown Company for scientifically correct SOLKA Pulps to match their paper needs for more than half a century. Today, our vast timberland resources, top flight research facilities, and modern manufacturing plants offer you even finer pulps to fit your requirements.

Let us know your problems. Write Dept. PC-11, our Boston office. Address inquiries in Canada to Brown Forest Products Ltd., Castle Building, Montreal.

BROWN QUALITY COMPANY

150 Causeway Street, Boston 14, Massachusetts
Mills: Berlin and Gorham, New Hampshire

THE NEW Mettler BALANCE FILLS THE GAP

The new METTLER multi-purpose balances have been designed to fill performance requirements not hertofore covered by other balances of the METTLER line. They fill a gap between the METTLER analytical balances and the high-speed METTLER precision balances.

The multi-purpose balances, designated in short as "H" balances, are built to weigh by substitution. This is the basic principle of weighing which gives the user the best guarantee of accuracy in his results. Operation is essentially the same as for the famous METTLER analytical balances.

The multi-purpose balances are available in three types.

Type H-5 (illustrated) is designed for the analytical field. Capacity is 160 grams, precision ±0.1 mg. Weights are calibrated to within class S tolerances.

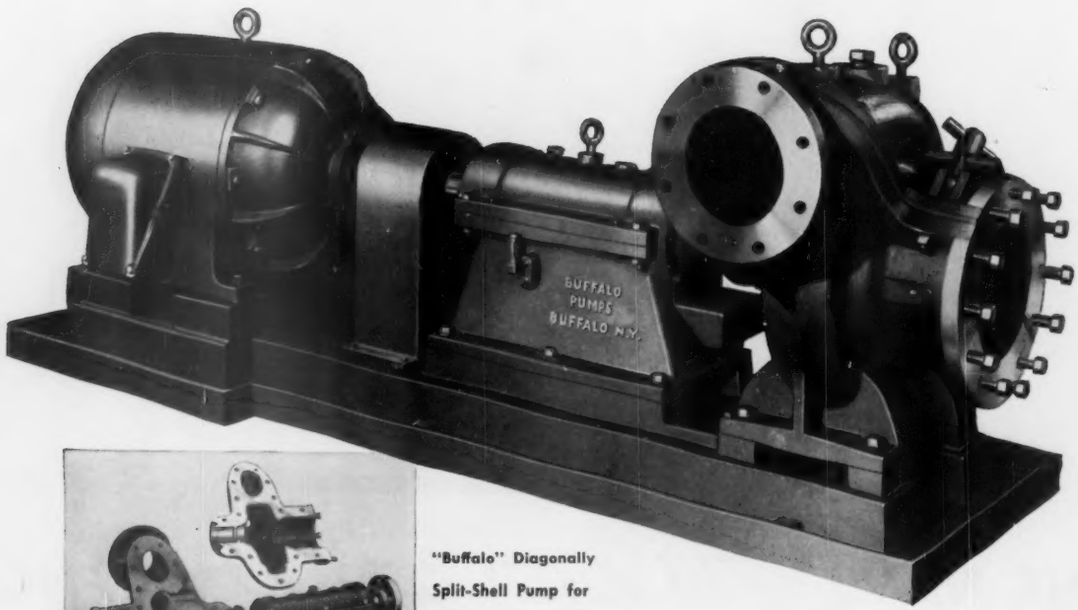
Types H-4 and H-3 are built for control weighings demanding a 1 milligram accuracy of the result. Total capacity is 160 grams. Time required for a weighing: 10 to 25 seconds, depending on type of operation.

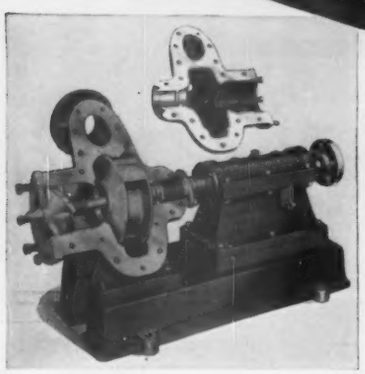
Price: $550.00 to $650.00.

Ask us today for complete descriptive literature of the 3 new multi-purpose balances.

Mettler
INSTRUMENT CORPORATION
HIGHTSTOWN, N. J.

Yes—it costs more to build but FAR LESS TO RUN





"Buffalo" Diagonally Split-Shell Pump for high-consistency stocks

"Buffalo" Diagonally Split-Shell Pump with booster screw impeller for high consistency stock with low submergence. Note easy access to impeller and stuffing box.

Yes, all parts of "Buffalo" Paper Stock Pumps are deliberately oversize, because from our many years of working with the paper industry, we know what a pump must have to operate economically, year after year. First, the overall strength to stay on the job. Second, the accessibility to make maintenance simple and fast. Third, efficiency that will be reflected in your power bills. And fourth, a broad line to give you the *best* pump for the job.

All these factors, while they add to the cost of building "Buffalo" Paper Stock Pumps, make up the "Q" Factor* that multiplies your operational savings through the years. This *major* economy of operation is the reason why "Buffalo" is the choice of paper firms everywhere. Write for Bulletin 953-J for the engineering details on this complete line of pumps "Custom-made" for the paper industry.

** The "Q" Factor—the built-in Quality which provides trouble-free satisfaction and long life.*

"Buffalo" PUMPS

BUFFALO PUMPS

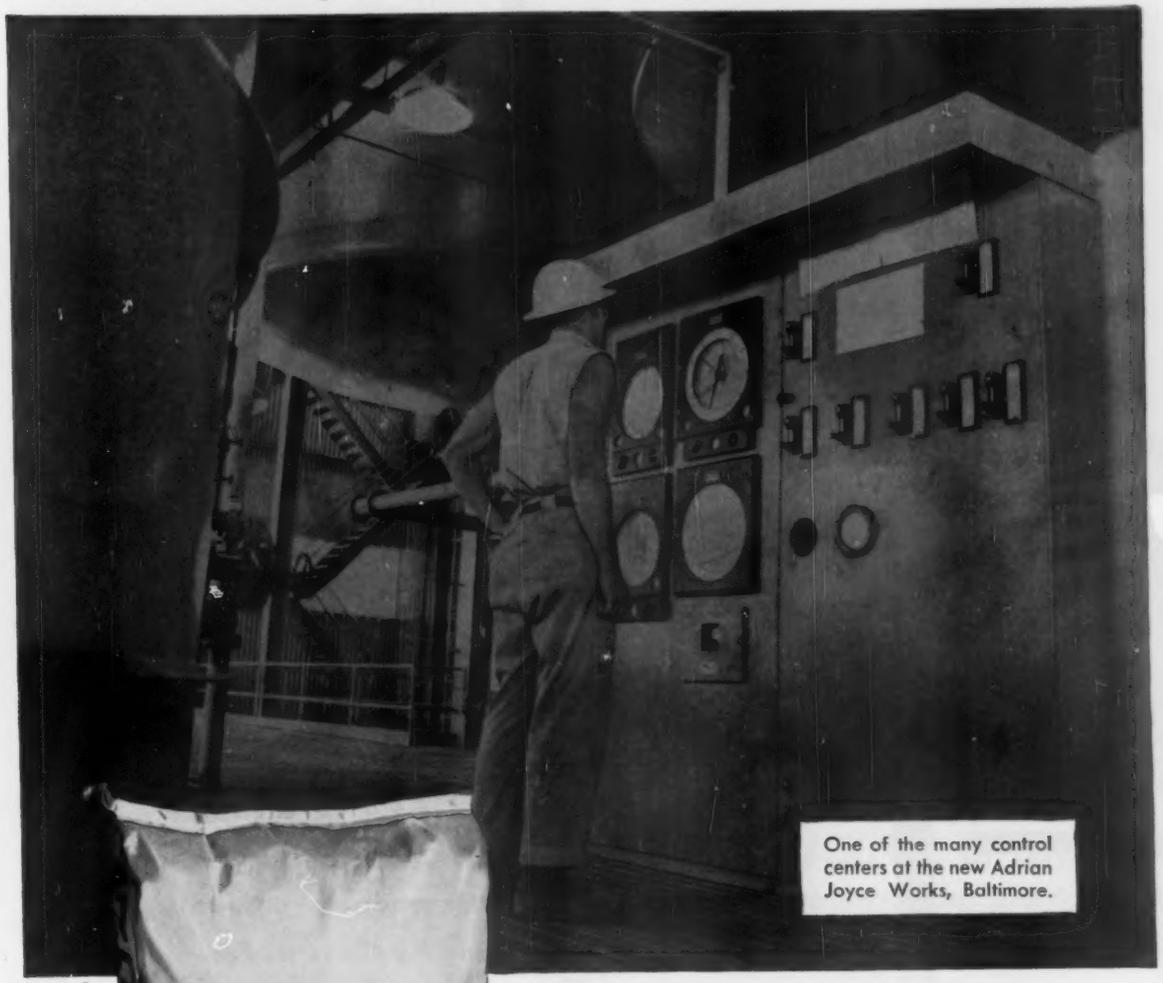
Division of Buffalo Forge Co.

220 MORTIMER ST. BUFFALO, N.Y.

Canada Pumps, Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

From the industry's most advanced pigment plant comes...



One of the many control centers at the new Adrian Joyce Works, Baltimore.

ZOPAQUE®
TITANIUM DIOXIDE

... the whitest white pigment available!

You can count on Glidden to supply your complete titanium dioxide requirements. Our new Adrian Joyce Works at Baltimore more than doubles the available supply of *Zopaque* Titanium Dioxide. Further plant expansions are now being made to help meet your growing needs in the years to come!

Zopaque gives you these advantages:

- Highly accelerated dispersion rate.
- Exceptional hiding power.
- Outstanding gloss and color retention.
- Low reactivity.
- Rutile and Anatase grades.

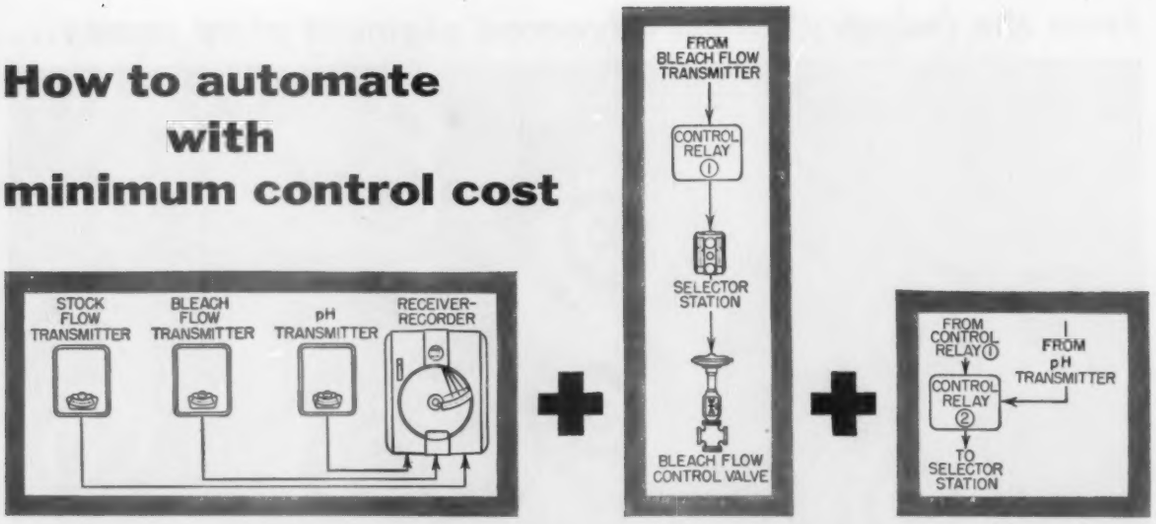
By the makers of SUNOLITH Lithopones and EUSTON White Lead

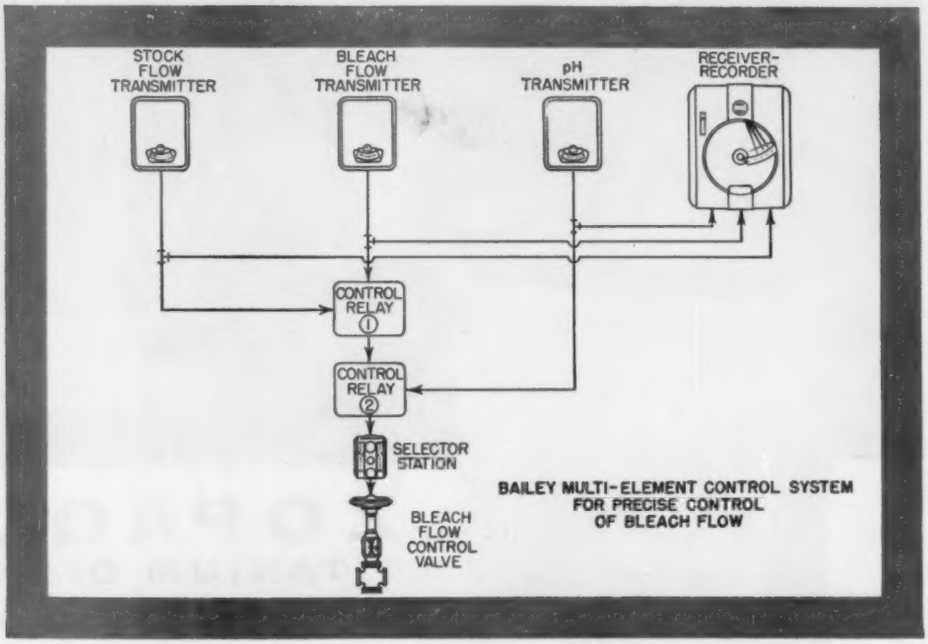
THE GLIDDEN COMPANY

Chemicals - Pigments - Metals Division

BALTIMORE, MARYLAND • COLLINSVILLE, ILLINOIS • HAMMOND, INDIANA • SCRANTON, PENNSYLVANIA

How to automate with minimum control cost





Instead of investing in an elaborate system of controls *before* you are positive of your process requirements, why not try this? Buy only the essential units first, as shown top left. Bailey Transmitters and a Receiver-Recorder measure and record the three variables.

Then as a first step toward automation, add a compatible Bailey Control Relay, Selector Station and Control Valve *for complete automatic control of one variable*, i.e. bleach flow.

All three variables (bleach, pH, and stock) can then be interrelated and automated *through just one additional Bailey Control Relay*. See last diagram.

It's as simple as that. Overall cost is low and spread over an optimum period. Maintenance and training are minimized. Your Bailey Engineer can apply his wide experience to your process too. Call him today.

P41-1

BAILEY METER COMPANY

PAPER AND PULP DIV., 1037 IVANHOE ROAD, CLEVELAND 10, OHIO

In Canada—Bailey Meter Company Limited, Montreal

INSTRUMENTS AND CONTROLS FOR POWER AND PROCESS

BAILEY METERS

BAILEY BUILDING BLOCK METHOD

F. J. Tompkins, Chief Design Engineer (right), Bernard Anik, Mechanical Engineer (left rear), Singmaster & Breyer, N. Y. C. Foreground, Michael De Piano, Cooper Alloy Corp.

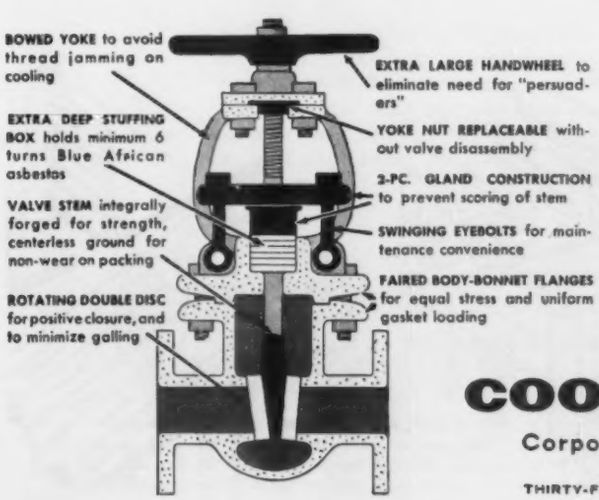
TOMPKINS and ANIK of SINGMASTER & BREYER

tell why they build Cooper Alloy stainless valves into their basic plant designs

Q. Gentlemen, precisely why do you buy Cooper Alloy valves?

FJT—With me, dependability is the main reason. My major concern is overall plant design, and frankly I don't have time to worry about every equipment detail. As specialists in designing and building "first-of-its-kind" processing plants, we need valves we can count on, and can "build in" as part of our original design. Cooper Alloy valves, we've found, fill that bill.

BA—From my point of view as a mechanical engineer, it's the Cooper Alloy valve *design* that appeals to *me*. It has extra features, like the extra-large handwheel, unique square compression of packing, bowed yoke, integrally forged stem, and others, all of which make for less maintenance and longer, more economical valve life.


BOWED YOKE to avoid thread jamming on cooling
EXTRA DEEP STUFFING BOX holds minimum 6 turns Blue African asbestos
VALVE STEM integrally forged for strength, centerless ground for non-wear on packing
ROTATING DOUBLE DISC for positive closure, and to minimize galling
EXTRA LARGE HANDWHEEL to eliminate need for "persuaders"
YOKE NUT REPLACEABLE without valve disassembly
2-PC. GLAND CONSTRUCTION to prevent scoring of stem
SWINGING EYEBOLTS for maintenance convenience
FAIRED BODY-BONNET FLANGES for equal stress and uniform gasket loading

A VALVE DESIGNED FOR STAINLESS!

The Cooper Alloy valve is not an adaptation of earlier brass and iron patterns. Cooper Alloy, with over 35 years of experience in handling stainless steel, created a valve *designed to be cast in stainless!* **Check the Special Design Features shown at left.**

As the little CA man below is saying: "*You can tell a Cooper Alloy Valve as far as you can see it!*" Write today for *your* copy of our folder "Design Factors In Stainless Steel Valves." The Cooper Alloy distributor near you will be glad to show you the complete line of Cooper Alloy valves *and fittings*, and their advantages. He can serve you promptly from local stocks.

COOPER ALLOY

Corporation • Hillside, New Jersey

VALVE & FITTING DIVISION

THIRTY-FIVE YEARS OF STAINLESS STEEL PIONEERING

SOLVE YOUR BROKE HANDLING PROBLEMS

Do it the easy way with an Automatic

Black-Clawson Broke Pulper

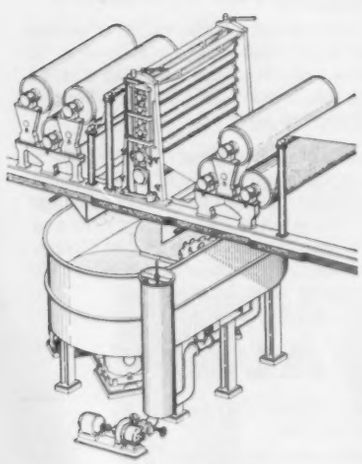
Are obsolete broke handling methods cutting into your profits? The old fashioned way to handle broke was to fork it, cart it, stamp on it, contaminate it and worry it into a beater.

The modern way, actually the cleanest and safest way, is to handle it automatically — by remote control. Locate the pulper under the paper machine and let broke coming off the machine feed directly into it. Every mill has a specific broke handling problem and Black-Clawson can furnish an efficient, economical broke pulper to meet any requirement, three sizes of refiners for defiberizing and hydraulic roll splitters to split reject rolls. Check over these new ideas in broke repulping equipment which have been proved in operation. Then, take a close look at *your* broke handling set-up. If it's time to modernize, let a Black-Clawson engineer make recommendations. Contact the Shartle Division, Middletown, Ohio. Ask for descriptive Bulletin 23-SB.

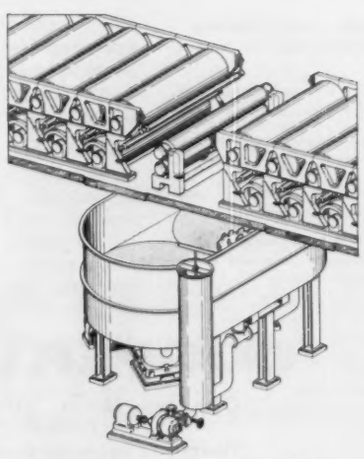
Takes Full Sheet Width Broke

The Duopulper takes more broke with less confusion than any other mechanism. It's a rugged piece of equipment that requires little head room — will fit under most paper or board machines. Installed in one of several locations under the machine it will take a full width web as fast as it leaves the machine and slush it quickly and efficiently.

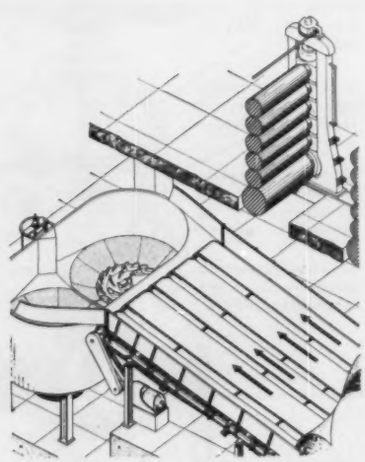
The Duopulper is an oblong fabricated steel, stainless or tile tub equipped with two powerful Hydrapulper rotors and drives. Can be equipped with regulating box and motorized control gate for automatic operation.



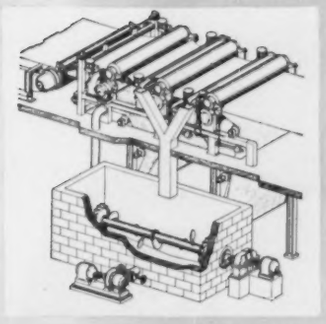
Under the calenders preceding after-dryers



Duopulper under size, smoothing press or coater in dryer section



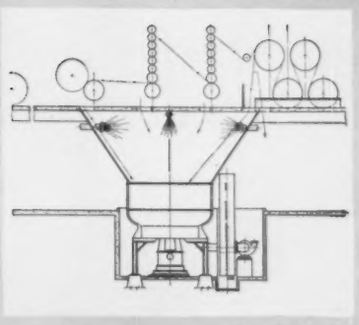
Automatic Broke Handling system using Duopulper and Broke Conveyor



New Hydrabreaker

Low operating cost is the main advantage of this pulper. Horsepower consumption is small due to use of horizontal shaft with series of variable pitch propellers and one or more Hydrapulper rotors. Tub can be steel, tile or concrete.

Single shaft type for wet broke under the presses. Double shaft used for dry broke under last dryer.



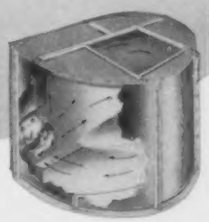
Broke Hydrapulper

Standard unit for continuous operation (batch optional) with flared, hopper-type tub located under dryers or calenders. All machine broke or trim can be directed by chute or conveyor into tub, quickly and thoroughly repulped and pumped back into system. No dirt or oil—no hauling, no waste or confusion. Can be automatically, remotely controlled. Several sizes available.

Off the Machine or Finishing Room Broke

HC—Hydrapulper Ideal for broke applications. Built with welded steel tub, welded steel rotor, pillow block mounted "V" belt drive or standard Hydrapulper drive. Range 5' to 17' tub diameter.

Hydraslusher...a side drive slusher with low head room. A practical, economical installation for repulping machine broke, finishing or converting room broke. Tub can be steel, cast iron, stainless steel, tile, or concrete.



Put Your Entire Broke Pulping Operation Under

Remote Automatic Control

A Black-Clawson broke handling system, starting and stopping the pulper, make-up water and dump pumps, can be automatically controlled in several ways. A photo-electric cell arrangement with the light source on one side of the sheet actuates a relay when a break occurs. Make-up water pump and pulper are started automatically. Dumping, water level and other factors remain under control until the break is repaired and the sheet is running through the machine. If preferred, remote push-button control can be substituted for the electric eye arrangement.

THE BLACK-CLAWSON COMPANY
SHARTLE DIVISION, MIDDLETOWN, OHIO

Executive Offices	250 PARK AVE., NEW YORK, N. Y.
Pulp Mill Equipment	PANDIA DIVISION, Hamilton, Ohio
Paper and Board Machines	PAPER MACHINE DIVISION, Watertown, N. Y.
Converting Machinery	DILTS DIVISION, Fulton, N. Y.
Canadian Sales and Manufacture	BLACK-CLAWSON (CANADA) LTD., Montreal, P.Q., Canada
British-European Sales and Manufacture	BLACK-CLAWSON INTERNATIONAL LTD., London, England
District Sales Offices	Atlanta, Ga. • Downingtown, Pa. • Appleton, Wisc. • Portland, Ore.

the brighter side of paper-making . . .

. . . is provided by TITANOX* white pigments! Eye-appealing papers start with TITANOX white pigments in which the inherent whiteness, brightness and opacity of TiO_2 are developed to the fullest extent.

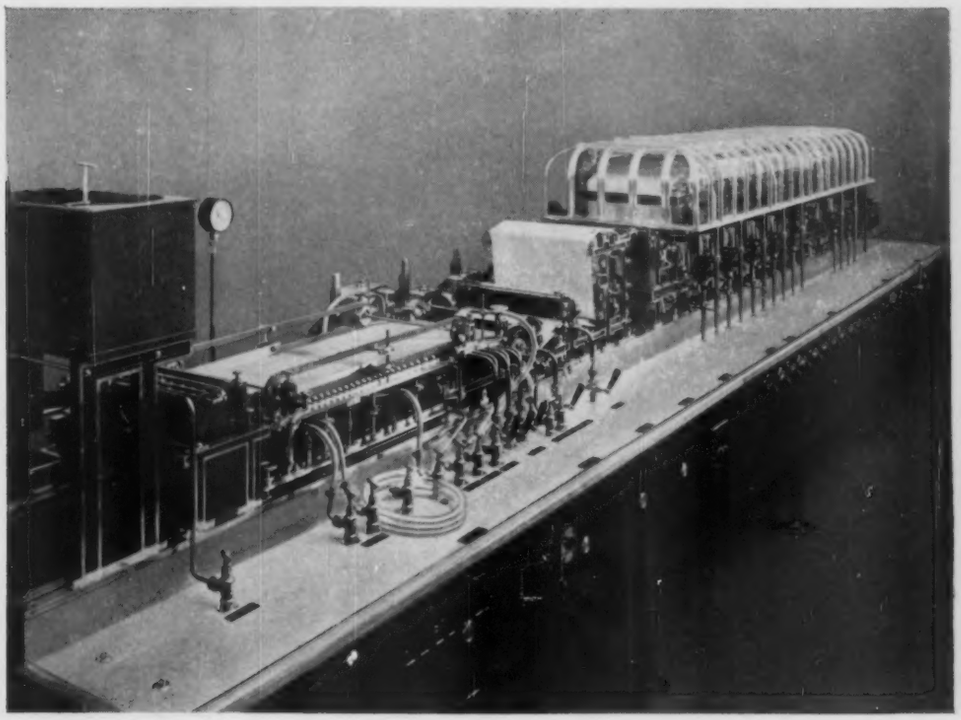
But end results are only half the TITANOX story. TITANOX pigments are engineered to arrive "de-problemmed" as it were . . . to eliminate problems in application of the pigment to the stock or to the surface of the sheet. Perhaps our Technical Service Department can help brighten up your paper-making through the best use of titanium dioxide. Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; Atlanta 5; Boston 6; Chicago 3; Cleveland 15; Houston 2; Los Angeles 22; Philadelphia 3; Pittsburgh 12; Portland 14, Ore.; San Francisco 7. In Canada: Canadian Titanium Pigments Limited, Montreal 2; Toronto 1; Vancouver 2.

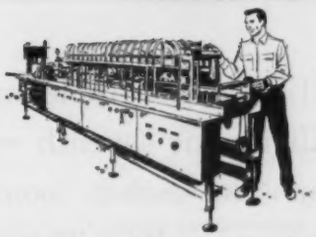
TITANIUM PIGMENT CORPORATION

Subsidiary of **NATIONAL LEAD COMPANY**

*TITANOX is a registered trademark for the full line of titanium pigments offered by Titanium Pigment Corporation. 4787

GET top quality experimental paper with NEW P & W Midget Fourdrinier Paper Machine





...and keep your full-size machines producing!

This one-man midget paper machine does a giant job of experimental paper-making the world over–serves the U.S. Bureau of Standards and other government laboratories... is favored at many leading American paper plants... and finds uses in the textile and plastics industries. All-electric operation makes it safer, cleaner, simpler than ever. Install the new P & W Midget Fourdrinier to keep your heavy equipment at profitable work while one operator—using the customary temperatures and pressures—tries out many types of paper which you can later duplicate on full-size machines.

These additional features help explain its world-wide acceptance:

Paper Quality Comparable to full-size Fourdrinier products

Weight of paper 12–120 lbs

Output Up to 3.3 lbs/hr

Speed 1.6–6.5 ft/min

Overall length 13' 1"

Overall width 32"

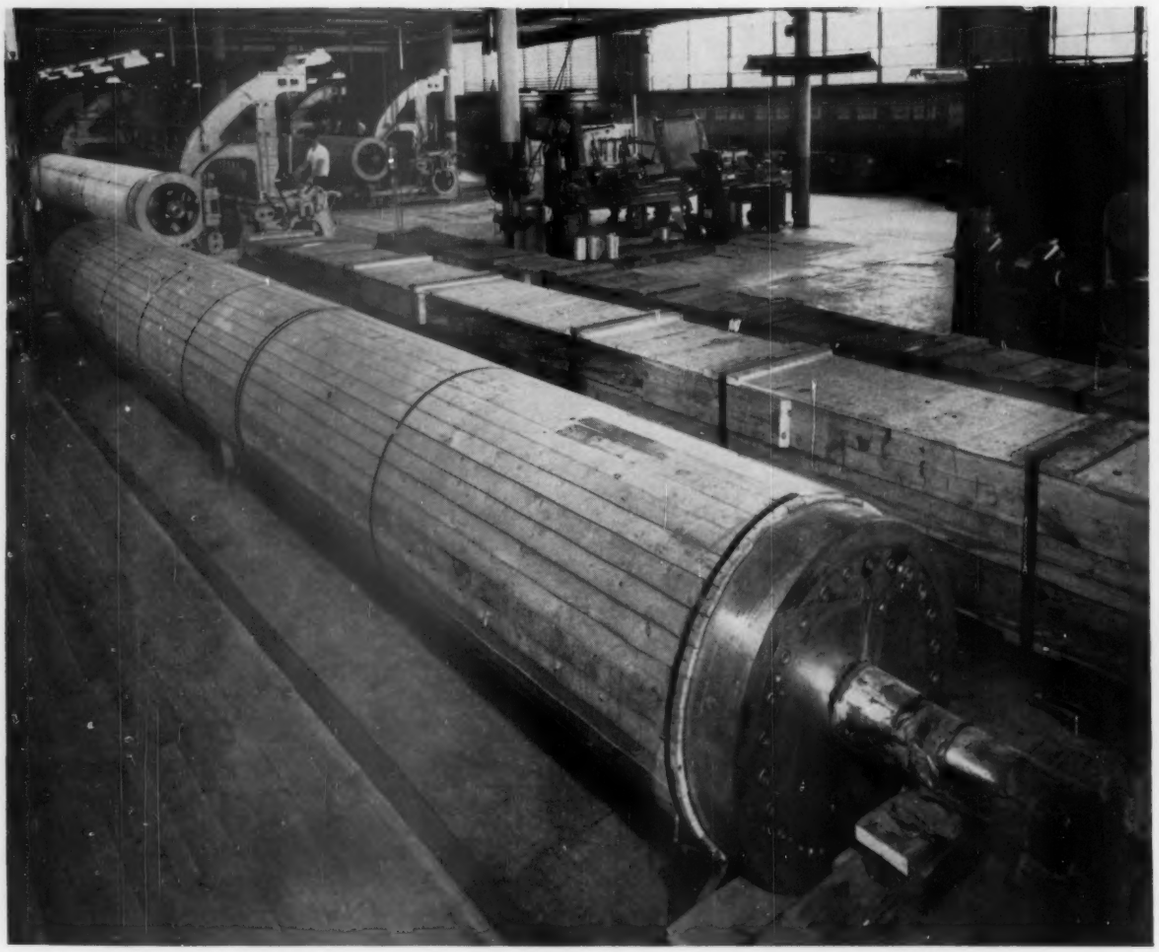
Working width 8-3/4"

Write for full descriptive literature—today.

PARSONS & WHITTEMORE

250 Park Avenue, New York 17, New York

PULP • PAPER • PAPER-MAKING MACHINERY • GRAPHIC MACHINERY



Six looms in the 290″ to 340″ size range are in operation at the Appleton Wire Works. Here, ready for erection, are crated rolls for the seventh — a 340″ loom which started operating in September. The eighth loom in this size range will be installed and operating by the end of 1957. These are *new* manufacturing facilities provided by Appleton Wire Works in the past two years to meet the changing requirements of the paper industry. Appleton Wire Works, Inc. General Offices, Appleton, Wis. Plants at Appleton and Montgomery, Ala. International Wire Works, Menasha, Wis., an affiliated company.

APPLETON WIRES ARE GOOD WIRES

E·Z·PULP

Statement of Policy

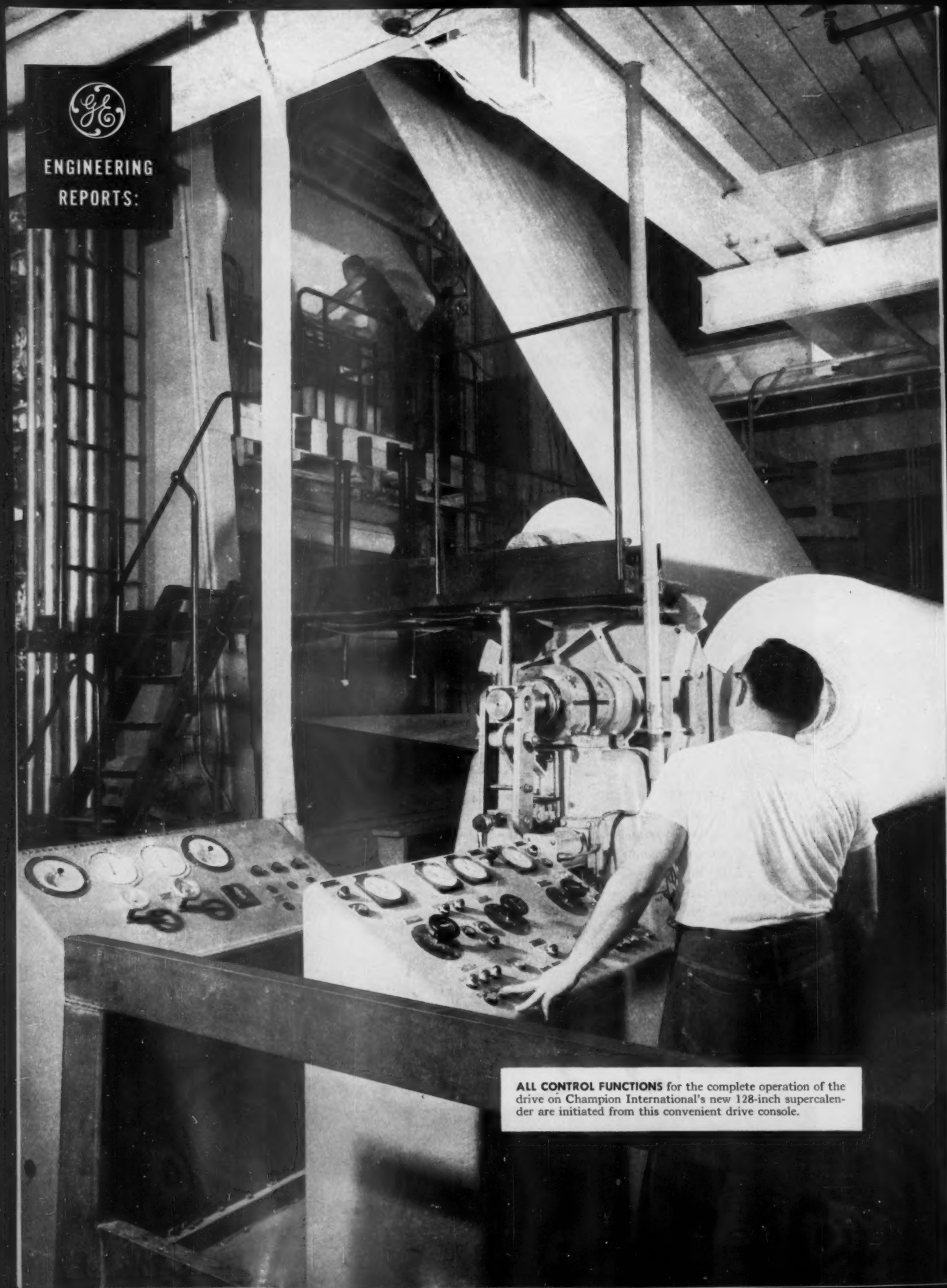
By JACK WARNER, President, G.S.P.

Since 1884, our family-owned company has built a reputation of which we are justly proud. To uphold this reputation, we have, many times, sacrificed greater profits. Unwaivering quality and uninterrupted deliveries have been our guiding light. Never, since our founding, have we pulled out of a market. Now, in order to diversify further our product line, we have entered the market pulp field. We offer our customers and prospective customers a continuous supply of super white sulphate pulp. Contracts for long-range pulp needs are now being made available. These contracts are backed by a reputation we will not forfeit.

HARDWOOD SOFTWOOD

Gulf States Paper
CORPORATION

E-Z PULP SALES DIVISION, TUSCALOOSA, ALABAMA



ENGINEERING REPORTS:

ALL CONTROL FUNCTIONS for the complete operation of the drive on Champion International's new 128-inch supercalender are initiated from this convenient drive console.

At Champion International's Lawrence, Mass., mill . . .

General Electric drive systems provide improved tension control at all speeds

Electrically regulated supercalender drive features automatic inertia compensation—reduces paper breaks

Producing high quality coated book stock, at more than 1500 feet per minute, C-I's new supercalender drive installed at its Lawrence, Mass., mill features automatic inertia compensation on the wind-up and unwind stands, accurate speed regulation, and fast, safe emergency stops—major advances in papermaking.

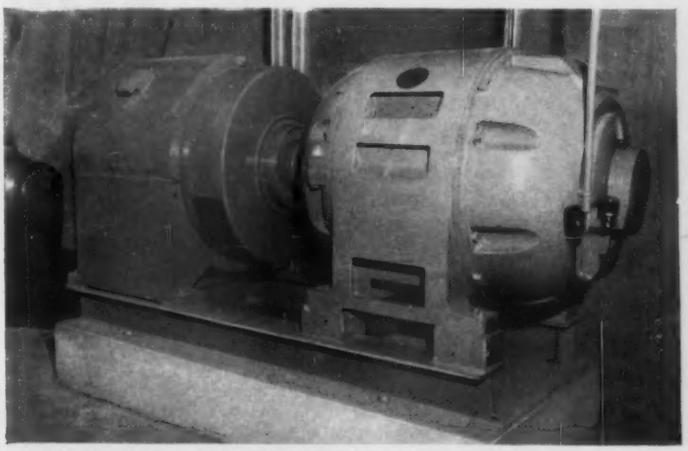
According to General Electric engineers, the new drive system provides fast, controlled emergency stopping of the supercalender, which is safer for operating personnel and increases paper production. Improved tension characteristics during accelerating and decelerating of the supercalender are obtained by a motor-driven memory rheostat that "remembers" roll size. Thus, inertia compensation is a function of the actual roll diameter. This represents the most advanced technique in control of paper calender unwind and wind-up stands.

Co-ordination of the equipment into a flexible, easy-to-maintain electrical system—designed to meet the mill's special needs—resulted from close co-operation between Champion International and General Electric engineers. To meet your specific drive system needs, General Electric engineering services can help design, equip and install a co-ordinated electrical system from one-line diagram to on-time startup. Early in your planning, call your nearest G-E Apparatus Sales Office. Meanwhile, write for bulletin GEA-6508 on paper mill drive systems to General Electric Co., Section 655-19, Schenectady 5, New York.

Engineered Electrical Systems for the Paper Industry

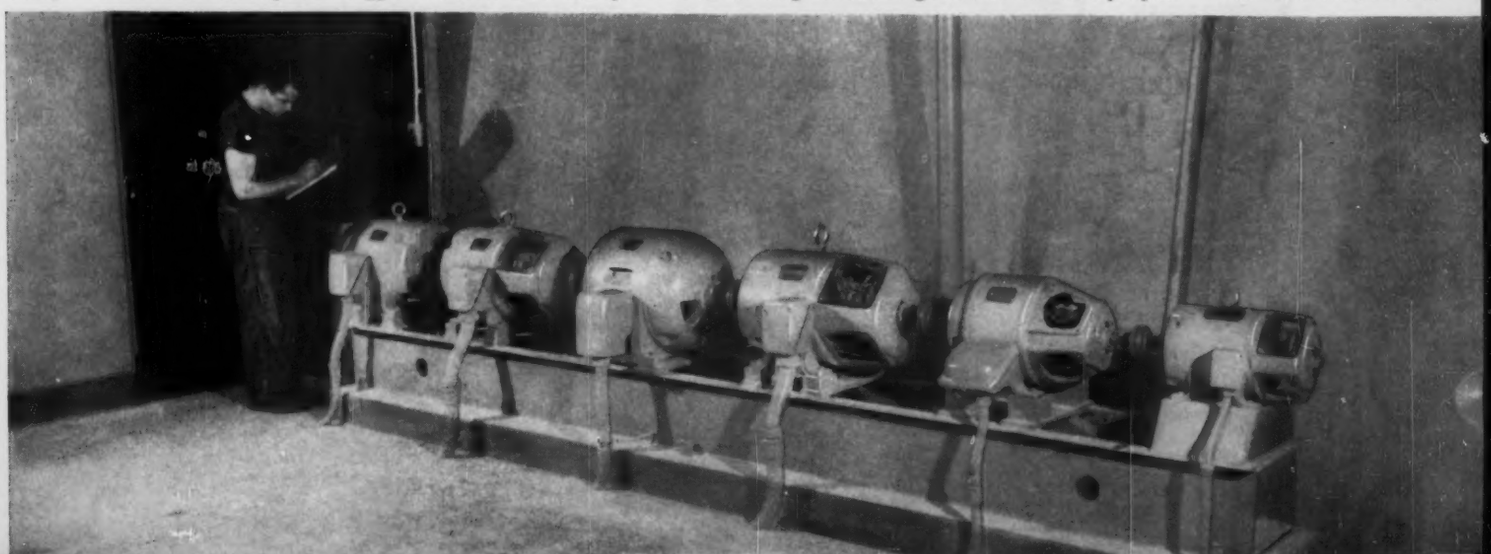
GENERAL ELECTRIC

OPERATION AND PROTECTION of the supercalender drive are provided by these convenient, accessible NEMA Type I enclosed control panels containing all necessary control devices.



MORE DEPENDABLE SOURCE of d-c adjustable voltage power is supplied by this 300-kw industrial type General Electric motor-generator set.

INDUSTRIAL CONSTRUCTION permits rugged service for this auxiliary M-G set containing Kinamatic* generators and an amplidyne. *Trademark of General Electric Co.



TRONA® *serves the Pulp Industry with*

2 QUALITY PRODUCTS

from 2 DEPENDABLE SOURCES

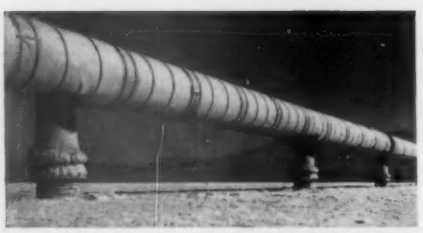
SALT CAKE

OF HIGHEST PURITY

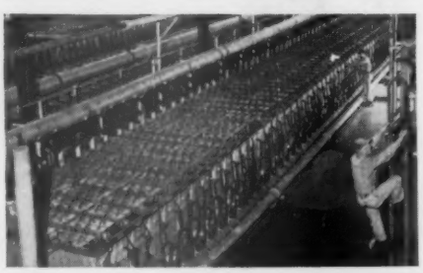
SODIUM CHLORATE

FOR CHLORINE DIOXIDE BLEACH

SEARLES LAKE
at Trona, California.
Source of *natural* sodium sulphate, essential for quality kraft production



HENDERSON, NEVADA.
Source of $NaClO_3$ for the *SOLVAY* high-stage chlorine dioxide pulp bleaching process.



Add another step forward in American Potash & Chemical Corporation's continuing diversification program! Trona has long been the leading source of *natural* sodium sulphate (Na_2SO_4) from the brines of Searles Lake, so essential in quality kraft production. Now from American Potash & Chemical Corporation (Nevada) (formerly Western Electrochemical Company) Trona serves the industry with highest purity sodium chlorate, used extensively in the SOLVAY high-stage chlorine dioxide pulp bleaching process. Two dependable sources, two quality products—a combination that can't be beat!

TRONA

American Potash & Chemical Corporation

Los Angeles · New York · Atlanta · San Francisco · Portland (Ore.)

Producers of: Borax · Potash · Soda Ash · Salt Cake · Lithium Bromine · Chlorates · Perchlorates · Manganese Dioxide · *and a diversified line of specialized agricultural and refrigerant chemicals*

Plants: TRONA and LOS ANGELES, CALIFORNIA
HENDERSON, NEVADA
(American Potash & Chemical Corporation (Nevada)
SAN ANTONIO, TEXAS (American Lithium Chemicals, Inc.)

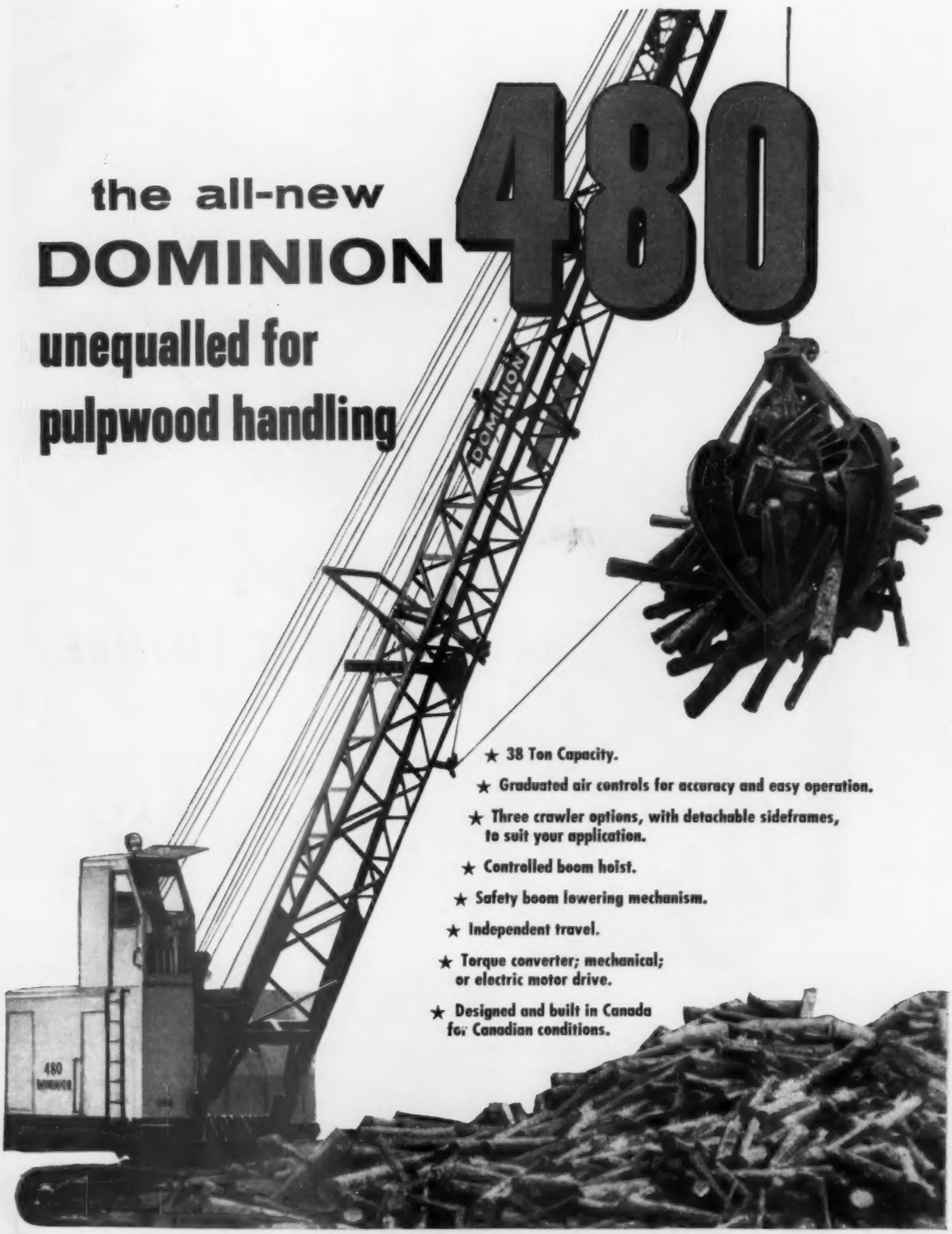
• Bituminous coal contributes to plant operating profits by its *productivity* and *stability*. Virtually limitless supply, plus most modern mining methods, gears production to *any volume demand*.

Accessibility and increasingly efficient burning equipment mean economical, constant-cost for today and tomorrow.

the all-new

DOMINION 480

unequalled for pulpwood handling



★ 38 Ton Capacity.

★ Graduated air controls for accuracy and easy operation.

★ Three crawler options, with detachable sideframes, to suit your application.

★ Controlled boom hoist.

★ Safety boom lowering mechanism.

★ Independent travel.

★ Torque converter; mechanical; or electric motor drive.

★ Designed and built in Canada for Canadian conditions.

POWER CRANE & SHOVEL DIVISION

DOMINION ENGINEERING

COMPANY LIMITED

MONTREAL • TORONTO • WINNIPEG • CALGARY • VANCOUVER

HD-6 WHIPS WATER AND MUD on a tough woods job

Up to its radiator in water—beating its way through thick growths of small timber, the HD-6 crawler tractor of Elwood C. Campbell, Franklin, Virginia, keeps producing regardless of conditions. Working in mucky swamp and mud, it skids logs 200 yards to the landing.

Campbell, a veteran pulp logger in the Black Water River area of Virginia, needs only a few words to tell about his HD-6: "It's a great tractor. What I mean, it's got plenty of power—it does the work. We haven't hooked it to anything yet it hasn't been able to bring out of the woods, no matter what the conditions."

Here's another example of how Allis-Chalmers tractors are giving southern loggers new ideas of what to expect from a logging tractor. Lubrication is no problem. Truck wheels, idlers and support rollers are protected by Positive Seals that keep swamp mud and water out, grease in . . . require lubrication only once every 1,000 hours. Wide track shoes for flotation . . . wide-open clearance under the tractor speeds operations in tough going.

Your Allis-Chalmers construction machinery dealer will be glad to arrange an eye-opening demonstration on your type of logging. Allis-Chalmers, Construction Machinery Division, Milwaukee 1, Wis.

ALLIS-CHALMERS *Engineering in Action*

AT THE MILL OR IN THE WOODLANDS — there's a Link-Belt Speeder, either crawler or rubber-tired, ideally suited to mechanize pulpwood handling. All models have hydraulic-power steer, easy access for low-cost maintenance and service.

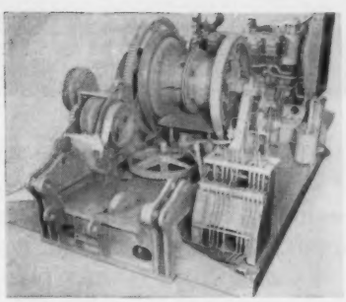
Increasing cycles per shift

Standard on every Link-Belt Speeder, Speed-o-Matic power hydraulic controls minimize operator fatigue. Response is fast, positive, precise

Exclusive with a Link-Belt Speeder, this true power hydraulic control system allows the operator to put his machine through its paces at the flick of the wrist. He's not subject to costly end-of-the-shift letdown . . . stays fresh, pushes his machine to its high limit throughout the shift.

Hydraulic-actuated clutches are self-compensating for heat and normal lining wear. Kick the engine over and go to work. There are no frequent stops for clutch adjustments.

It's advantages like these that put Link-Belt Speeder years ahead of the field — in productivity, in low maintenance and service costs. Start having your equipment dollars earning bigger returns. See your Link-Belt Speeder distributor now. Or write: Link-Belt Speeder Corporation, Cedar Rapids, Iowa. 14,322



MORE USABLE HORSEPOWER than other machines using the same make and model engine. Yet a Link-Belt Speeder remains well within the engine manufacturers' recommended operating speeds. It's possible because a Link-Belt Speeder is an extra-strength machine, designed and built to take full advantage of an engine's available power. This extra strength is evident in the size and quality of shafts, gears, clutches and structural members.

TRUE POWER HYDRAULIC CONTROLS—a Link-Belt Speeder exclusive, Speed-o-Matic power hydraulic controls, transmit pressure through oil directly to the clutches . . . eliminate over 150 wearing mechanical parts. Clutches engage smoothly, positively—without jerk, jump or lag. Oil is maintained at proper pressure by an engine-driven hydraulic pump.

It's time to compare . . . with

LINK-BELT SPEEDER

Builders of a complete line of shovel-cranes . . . with exclusive Speed-o-Matic power hydraulic controls

How to load 240* cords daily ..and save $1.00* per cord.. with TD-9 Skid-Grapple®!

Exclusive load control is the big answer. Positive, all-weather, all-terrain load control all the way, which only an International Drott Skid-Grapple gives you!

You simply slide the Skid-Grapple's lower prongs under the woodpile. Apply exclusive triple-power, pry-action break-out and ground-level roll-back. The exclusive International Drott-designed, frame mounted skid-shoes on the ground provide the fixed fulcrum point.

Then you clamp onto the load securely with the exclusive top grab-arm. The third valve, standard equipment in International Drott design, provides the power source for complete top grab-arm control.

A cord at a time!

Even if the pulpwood is frozen down or mudded in, you get a big payload every time. The International Drott TD-9 pulpwood Skid-Grapple can pick up one cord of 8-foot pulpwood at a time—can load 240 cords, or more, daily, with only a one-man crew!

Separate top grab-arm control of every stick of wood lets you spot-place each grapple-full with ease, safety, and accuracy!

See how you save $1.00 per cord, or more, by streamlining pulpwood handling with an International Drott Skid-Grapple. Compare the stay-put advantages of this rig that has logger-designed strength—and is mounted on the basic, super-strong Skid-Shovel frame. Measure the performance-protection of exclusive,* shock-swallowing Hydro-Spring! See your International Drott distributor for a Skid-Grapple demonstration!

The TD-9 Skid-Grapple can put it "up there," fast—as high as 10' 2"—for efficient loading or repiling. The Skid-Grapple interchanges with 4-In-1 or standard Skid-Shovel bucket to give you a capable road-building and material-handling unit!

*or more

International Harvester Company, Chicago 1, Illinois
Drott Manufacturing Corp., Milwaukee 15, Wisconsin

INTERNATIONAL® DROTT®

Note that Skid-Grapple dumping resembles the way you ease down an armload of firewood ...There's an International Drott Skid-Grapple to give you world-beating pulpwood handling efficiency—whatever length it's cut!

TIGHT SCHEDULE AT MACCLENNY, FLA., BUT...

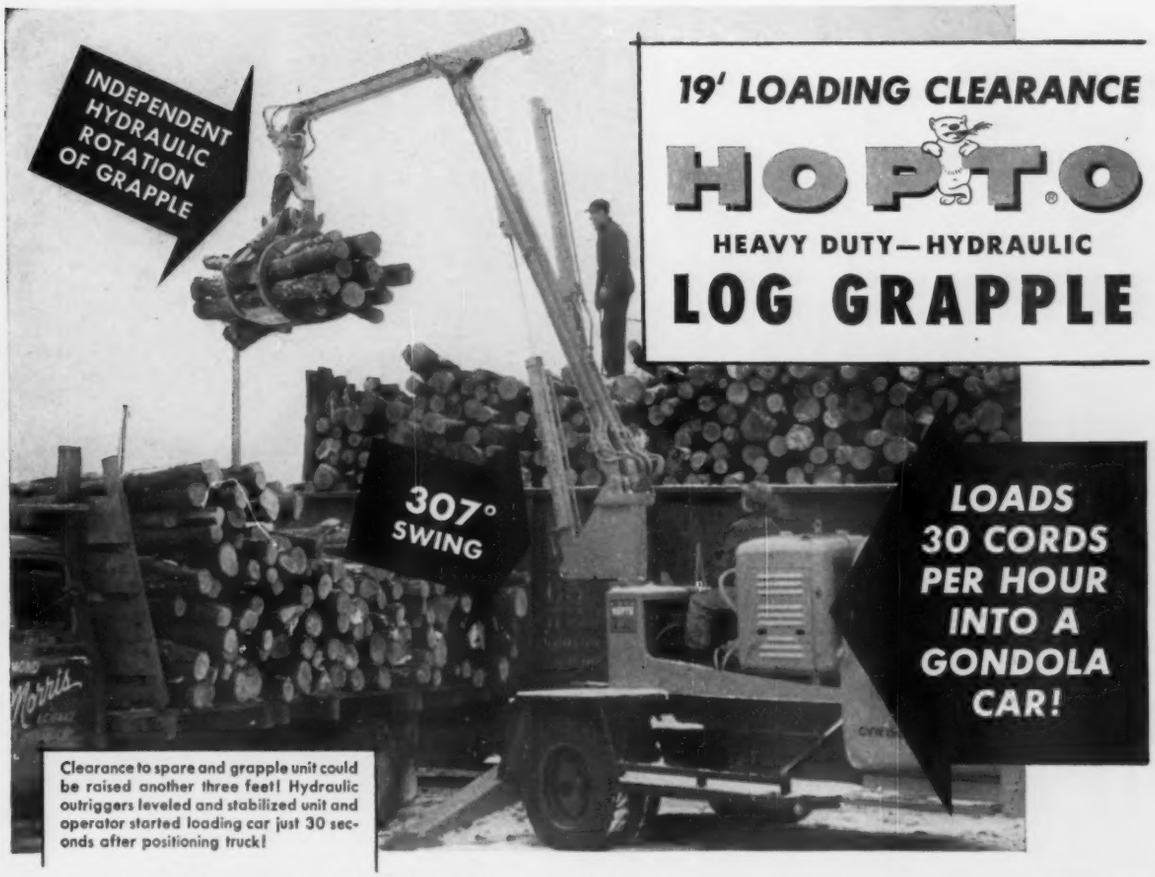
FORD KEEPS PULPWOOD MOVING!

3 FORDS, 3 FMDS on 65,000 Acres of Stumps, Rocks and Sandy Loam—Total Downtime: 2 Hours a Week!

"Our site preparation program of 3,100 acres per year in this area and our tree planting program of 3,000,000 trees per year are too tight to allow for downtime," says Alfred E. Smith, area manager of Gair Woodlands Corp., Macclenny, Fla. "We've found the efficiency and dependability we need in Ford gasoline and diesel tractors. We use them year-round for planting seedlings, hauling timber in sandy loam too soft for heavier equipment, and for plowing and cleaning our 1,000-mile network of firebreaks."

Ford and Fordson Major Diesel Tractors offer the same economical power and dependable service for all kinds of planting, raising, cutting, hauling and milling work in all kinds of pulpwood operations—large or small. Ford can save time and money on *your* job, too, can keep work moving ahead of tight schedules. Get details from your Ford Tractor and Equipment Dealer, or write to: Tractor and Implement Division, Ford Motor Company, Birmingham, Michigan.

YOU SEE MORE FORDS BECAUSE THEY SAVE MORE MONEY!



Clearance to spare and grapple unit could be raised another three feet! Hydraulic outriggers leveled and stabilized unit and operator started loading car just 30 seconds after positioning truck!

19′ LOADING CLEARANCE

HOPTO®

HEAVY DUTY—HYDRAULIC

LOG GRAPPLE

Badger backs up the claim of cutting handling costs with proof! You can prove it yourself . . . show a *worthwhile, measurable* difference . . . shrink handling costs of pulpwood to a fraction of previous costs! Here's how you can:

PROVE IT by cycling time and swing! With a 307° *continuous* swing and a *20* second cycling time you handle more loads per hour and boom swing is automatically cushioned for faster, *safer* starts and stops!

PROVE IT by independent rotation of grapple! Rotation of loaded grapple is done during boom swing so load is in position for uniform piling at completion of cycle . . . and ready to take a new, *big, fast* 'bite' at other end of cycle!

PROVE IT by loading height! You have a *full 19′ clearance* for every loading or stockpiling operation.

PROVE IT by mobility and set up time—HOPTO mounts on any ton and a half or larger truck . . . quickly moves from one location to another. Independently controlled outriggers level and stabilize unit, *from operator's seat* . . . unit is ready to operate *within 30 seconds.*

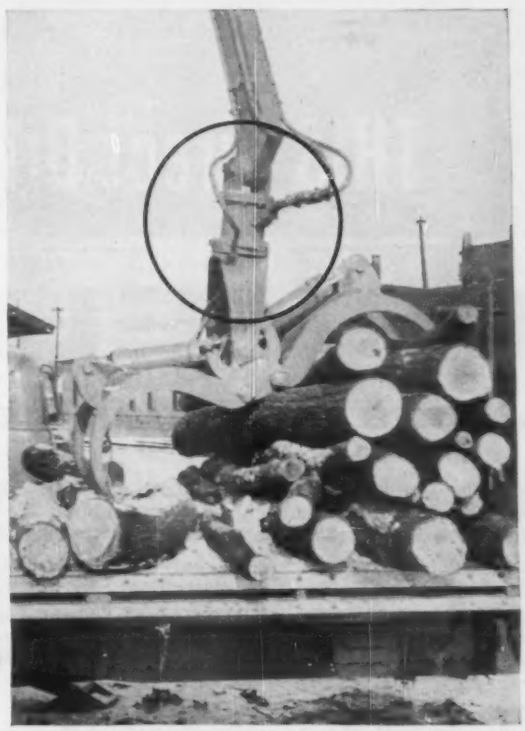
PROVE IT by its outstanding safety features, the heaviest-duty, largest GPM hydraulic system in the field . . . and the proven engineering features that have made a digger-shovel-crane adaptation of the HOPTO 307 the standard of comparison in the construction industry!

WRITE TODAY for complete information and specifications on the HOPTO 307. Compare HOPTO with any other unit and you will know why HOPTO *is* the difference between profit and loss on your pulpwood handling problems.

BADGER MACHINE CO.

WINONA, MINNESOTA • Dept. X

Manufacturers of a complete line of heavy-duty, completely hydraulic grapples, cranes, diggers and shovels. One of the twelve models for wheel or track-type tractor mounting, for truck mounting, or complete wheel or track units is exactly right for your handling problems.



Independently operated rotator immediately above grapple positions unit *for any angle . . . at any height up to 19′ clearance!*

THIS Direct Drive Saw Can Take It

HOMELITE

stands up under the grind!

Here's the world's lightest, most powerful direct drive chain saw — and it's designed for production cutting! It's precision built. It's a glutton for punishment. It has the power to do more cutting in less time and with less maintenance!

With 6 full horsepower packed into only 19 pounds, the Homelite EZ-6 has *all* the features the professional woodsman needs; features like high-compression, short-stroke design to cut wasteful friction, increase engine life, reduce gas consumption . . . new, revolutionary intake valve to increase engine power, assure smooth performance . . . positive-action fuel pump and diaphragm carburetor to give full power in any position.

Additional EZ-6 features include automatic governor . . . automatic clutch . . . moisture-proof and dust-proof ignition . . . needle bearings on connecting rod . . . ball bearings on crank shaft. *The EZ-6 is the direct drive chain saw "built to take it."*

Ask your dealer for a demonstration.

EZ 6

See all the famous Homelite line!

6-22 most versatile, all-purpose gear drive chain saw available. Has straight blades, plunge-cut bow, brush cutting and clearing attachments. 6 horsepower, 22 pounds. Gives you everything you want for dependable, year-round performance.

4-20 rugged gear drive chain saw gives you consistent, dependable performance in a wide range of cutting jobs. 4 horsepower, 20 pounds, cuts trees up to 4 feet in diameter.

7-29 most powerful one-man chain saw you can own. 7 horsepower, 29 pounds. Powerful enough to bring down any tree in a stand. Fells trees up to 10 feet in diameter.

Homelite builds and sells more chain saws than any other company in the world.

HOMELITE

A DIVISION OF TEXTRON INC.

7711 RIVERDALE AVE., PORT CHESTER, NEW YORK

Gastonia, North Carolina

Truck to Mill 30-ton LORAIN Cuts Costs

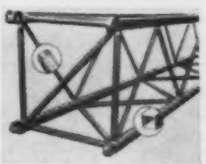
Finch Pruyn & Company, Inc.

has put its 30-ton Lorain Self-Propelled Crane, model SP-530, on *double duty*. Here's how this versatile Lorain, as shown above, works 8 to 16 hours a day for this progressive Glen Falls, New York, pulpwood processor:

(1) Using 70 feet of boom to reach far and stack high, the Lorain equipped with a wood sling unloads wood from trucks to blockpile, handling 1¾ cords per lift — weighing up to 10,000 pounds. And (2) equipped with a ¾-yard pulpwood grapple, the fast-moving, rubber-tire Lorain feeds the mill. Here's one machine doing two productive jobs.

The Lorain SP-530 is a fast, agile producer. Some of its important design features, all controlled from operator's position, include — simultaneous hoist-swing-travel; 4 travel speeds in both directions; automotive-type air-power steering; air brakes on the four rear wheels; and 2-lever, "Joy-Stick" Controls available for easy, fast power operation.

Another outstanding feature of the Lorain SP-530 is the newly developed, patent-applied-for Lorain Square - Tubular - Chord Boom. This stronger — yet lighter, weight-saving design permits greater lifting capacities and increases operating ranges.



See your Thew-Lorain Distributor — he can show you the many ways Lorains cut pulpwood handling costs.

THE THEW SHOVEL CO., LORAIN, OHIO

THEW LORAIN®

Screaming Power Saw . . . and Groaning Trucks (loads represent less than one day's work) are typical scenes in . . .

Dixie's Champion Pulpwood County

. . . where at least 13 mills find raw material . . . 12 years ago it was "apathetic" about pulpwood . . . here's how it changed . . .

By WILLIAM F. DIEHL JR.
PULP & PAPER'S Southern Editor

● Clinch County, Ga., is 535,000 acres and 90% of it is timber. The area of the largest farm in the county is a mere 150 acres. In all, only 50,000 acres are presently under produce cultivation.

In Clinch, the product is trees—mostly pine trees.

In 1955, 323,739 cords of pulpwood were harvested from this lush woodland, more than twice the amount taken from any other county in the South.

Name almost any pulp and paper company in Southeast Dixie; you can bet it has either lands or a woodyard in Clinch.

Within trucking distance of its sweeping forestlands are 13 major paper mills; Macon Kraft, Brunswick, Union Bag-Camp, Southern Paperboard, St. Regis' Jacksonville mill, two Owens-Illinois mills, Buckeye Cellulose, two Rayonier mills, Container Corp., Hudson and St. Marys Kraft. The farthest away: Macon Kraft, less than 150 miles to the north. The closest: Valdosta, less than 40 miles west.

A Lot Of Activity . . .

Within its confines, many big Southern companies are performing jobs which are new and exciting. Brunswick and Rayonier are in site preparation work; St. Regis' big land management program is in full swing here (See "St. Regis Goes Around in Circles," June, 1957, PULP & PAPER), new equipment has had the bugs shaken out of it in these woods and sawmills looked into the matter of chips from sawmill waste when the idea was still a rumor in other places.

The pine tree is more than a business in Clinch—it is the way of life. Even some of the smallest landowners have their land in trees.

The Big Fire . . .

Why is Clinch County Dixie's pulpwood "champ?"

One reason is obvious—although it is far from the only reason. Early in 1955 lightning kicked off one of the worst forest fires in Georgia history. It raged for three frightening days and nights and left, in its wake, more than 100,000 smoldering acres. For 72 hours the highways were alive with sparks and the sky was hued blood red.

Much of the land destroyed in this blaze belonged to paper companies. But private landowners suffered very serious losses, too.

Even before the fire, Clinch citizens had come to realize the importance of trees to their economy. When the last flame was snuffed out, almost everyone had "got religion."

"Folks here in Clinch were kind of apathetic about the woods for a long time," a restaurant owner told PULP & PAPER. "Then when the paper companies started coming in, that's 10, 12 years ago, things started to change. Nobody cared much for awhile. Then folks began learning a tree was like money in the bank. After that fire, we knew for sure. It hurt bad."

Information From Experts . . .

But the big fire is only one reason why views have changed, why forest farming has become a leading revenue

source and fire protection has been added to the "Golden Rules" of Clinch County. The paper mills have helped bring a change in philosophy over the years. It has paid off for everyone.

Take International Paper Co., which has a sizeable investment here in land and wood supply. In 1956, IP paid out $704,000 for wood in Clinch County alone. That's enough to make anyone start thinking twice about putting trees on idle land.

To get Clinch County "thinking pine trees" was a long-range job and one which all the companies took part in.

Forestry Leads the Class . . .

Interest in trees in Clinch County is not confined to "strictly business" but goes deeper. Foresters from pulp and paper companies assist in the classroom in Homerville high school, giving vocational agriculture teacher, Joe Brooks, a hand. Forestry is one of the most popular subjects in the high school, even among the girls.

A 10-acre forest, one of 50 sponsored by Union Bag-Camp and located on Union Bag-Camp lands, is used by the high school FFA chapter as an outside classroom. To continue interest in these projects, Union Bag-Camp awards cash prizes to the top chapters every year. The Homerville chapter has won both state and district honors.

A Part of the Community . . .

"Most of the men working for pulp and paper companies in Clinch, like us, have become part of the community," IP District Supervisor W. D. Young told PULP & PAPER. "We've just tried to be good citizens, enter into community and church groups. Our wives take part in garden clubs, things like that. We get known and liked and respected here. People know they can depend on what we tell them, like the fellow in the corner store. Now, when we pass on information about growing trees or fire protection, anything like that, they listen. People have learned to trust us, that's all."

Mr. Young, a graduate of the U. of Georgia and assistant state forester before he joined International Paper, is typical of the kind of men who have sold good forestry practices to Clinch County. He and men like John Michel, Harvey Mook and Roger Merritt of Union Bag-Camp and Dyal Wood of St. Regis have been selling good forestry practices to these people for years. Result: A lot more people are forest farming and most of them look to the pulp and paper companies for advice and help.

More Than Public Relations . . .

Because of his interest in the county, the forester has become more than just a public relations man for the company.

"Time was," a forester from another company told PULP & PAPER, "local folks would come out, see us clearing our woodlands, harrowing and cutting out roots and undergrowth, they'd just figure we were touched and go on about their business. Today they come and ask; they want to learn. And we've been learning things from them, too. There's a spirit of cooperation here. It's a good thing—everybody profits."

Typical is the interest shown in Union Bag-Camp's experiments in direct seeding from the air, which have been underway in Clinch County for the past two years. Should these tests prove successful, and the activity enlarged to an operational level, it is expected to aid greatly in the rehabilitation of large burned areas in the county. Union Bag-Camp is presently harrowing and planting these cleared areas.

Play An Honest Game . . .

The companies operating in Clinch have also learned that it pays to select the right pulpwood dealers and to help him and his producer as much as possible.

"A bad dealer can give the whole company a black eye fast," one woods engineer commented. "He can tell the landowner he'll take trees of such-and-such a size, then get in the woods and cut out anything he wants. The dealers in this county have learned they can't operate long like this. Everybody plays an honest game and that's important. The dealer passes on this idea to his producers and everybody's happy that way."

International Paper, for instance, takes wood from two dealers, each of whom has 20 to 25 producers working for him. Each dealer is given a wood order of about 450 cords a week to supply and they are responsible for acquiring the necessary private stumpage.

IP makes his job a little easier by selling him stumpage from company lands, then paying for the delivered wood at its Homerville yard. To soften the job even more, the dealer can deduct the price of stumpage from his delivered wood and avert tying up a lot of money in stumpage. Companies, too, have helped producers to set up sound accounting practices and to mechanize their jobs when they can afford to so so.

Chester Hall and Son is perhaps the county's top pulpwood producer.

New equipment is prevalent . . .

like this Lufkin Trailer packing several cords of pulpwood to Owens-Illinois mill at Valdosta, Ga.

In Homerville IP yard . . .

Dixie Loader gives up three pallets of pulpwood to Lorain crane.

Working for dealer J. R. Bateman, he is given a wood order of about 120 cords a week to supply.

"We could cut up to 150 to 175 cords a week if we raised the ante," Mr. Hall told PULP & PAPER. "We have the machinery and the team to do it. But we couldn't cut our quota without the tools."

As an example, Mr. Hall pointed to his three chain saws.

"We're getting as much wood with those three Homelite power saws as we formerly got with 11 wheel saws," he said.

Mr. Hall is working mostly flat, dry terrain, using two series 800 Ford wheel tractors to snake logs into a clearing, then cutting them and loading in the same location. He has four Chevrolet pulpwood trucks, three of which are new. ("That fourth truck is so old it's stuck together with spit and imagination—but it still gets the load in.")

Companies have helped the dealers through the free seedling programs, too, distributing the seedlings by way of the dealer, who is thereby helping his source of supply perpetuate his timber stand.

Hardwood Control . . .

Other messages have been put across here, too. Hardwood control, for instance, is accepted in Clinch because it has been fully explained to the people. Since most of them are in the business themselves, they have learned to realize its importance. It is significant to note that in 1955, when 323,749 cords of pulpwood were cut in Clinch County, only 275 cords of hardwood were produced.

Chips Have Helped . . .

The advent of sawmill chips has increased cooperation between sawmill operators and pulp and paper companies. In the South, there is still some antagonism between the sawmill operator and the pulpwoodman. In Clinch County this is probably less true than any place. One of the county's major lumbermen, Alex Sessoms, is also a pulpwood dealer and his mill provides chips to a paper company.

A lot can be learned from the example set in Dixie's pulpwood king county. Although it may have taken a fire to shake up ideas here, the seeds of good forestry and tree farming were planted by intelligent company practices long ago. The outcome is a good harvest for all. ●

For Snaking Long Logs from Woods . . .

1. Metal framework, braces and a "beefed up" Ford tractor . . .

2. Sling is attached to log . . .

3. Tractor backs against tree.

. . . . . and the winch then does the rest of the job.

For snaking logs this way, top pulpwood producer Chester Hall, of Clinch County, Georgia uses a winch made by Charles Riordan Co., Chicago, Ill., termed by him, "the best winch for this kind of work, and we've shopped around aplenty."

The chain, according to Mr. Hall, runs off the power takeoff; no bull gear or pinion to shear off. "But," says Mr. Hall, "you got to beef 'er up."

He takes his Ford series 800 wheel tractors to a local machine shop and has the pan reinforced under the power takeoff, braces along both sides of the winch and under it and the metal frame reinforced. Total bill: $84.

"We have been using these two tractors ever since we had them beefed and we haven't had a breakdown yet. Just hook up the sling to the tree, back up against a tree and haul it in."

Mr. Hall also talked a moment about tractor tires:

"You sure hear a lots of talk about tires. We tried everything . . . putting water in them, all that stuff. The secret is to use a smaller tire, size 10-28, and fill it with air. Lots of producers use 11 or even 12-28s and moan about snagging. Those tires are too big, too much rubber on the ground. Water just makes them heavier. The smaller tire full of plain old air will do the trick." ●

Clinch County Means Trees

● The elderly gentleman sitting on the steps of the Homerville, Ga. city hall shoved his straw hat back over white hair, scratched at the walk with his cane and said:

"You know that fellow wrote the poem 'Trees'? He must've been through Clinch County just 'fore he set pen to paper. Why, son, this here's where God was standing when he created the tree. . . ."

W. D. Young (left) keeps radio contact . . . with IP's impressive array of fire fighting equipment (right), especially since Clinch County . . .

Learned a Lesson from "The Big Fire"

• Clinch County, Georgia—the South's biggest pulpwood production area—has a healthy respect for fire. If it didn't before "the big fire" started (in 1955), it did three days later, when it was all over.

Today they'll tell you to think twice before tossing a cigaret out the window of the car or leaving a smoking campfire behind. The landowners know, too, what it means to have a tractor and fire plow and other equipment handy and ready for action.

The paper companies have always had their own equipment on hand. International Paper Co. has two International Harvester TD-9 fire units, including a Mathis fire plow and transport; an 18-A and 14-A bulldozer, a TD-18A, TD-14 and a TD-9 and a Ford wheel tractor—all earmarked for fire control when necessary. International Harvester heavy transports carry the equipment to the scene of the fire. Smaller, radio-controlled units are used to transport fire crews to the scene.

To keep its men alert to the fire danger, all unit foresters, district supervisors and three pickup trucks are equipped with General Electric portable transmitters. The office transmitter is interconnected with the state radio channel.

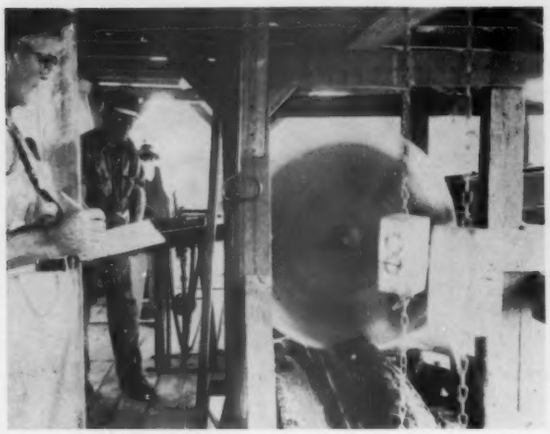
"If our equipment is free, we're ready to go in and help St. Regis or Union Bag and Rayonier or anybody else in trouble, especially the small landowners," said W. D. Young, International Paper Co.'s district supervisor. "The other outfits operate the same way. And the private owners who have equipment also pitch in in case of trouble."

Union Bag, for instance, has a licensed pilot, T. A. McDonald, who flies a constant fire patrol during the dangerous months from January through April when fires are most likely. It also has two fire suppression units, a large bulldozer, a medium tractor with dozer blade and dirt bucket to use in fighting fires. Two other men in adjacent counties are also ready to come in if needed. (During the big fire, a total of 50 units were called in from the state and paper companies.)

Today, there are 13 full-time fire suppression units stationed in the county, ranging from the big units like International Paper's to small one-tractor outfits owned by private landowners. They are valued at an average of $15,000 apiece. Almost $200,000 in fire fighting equipment is ready for emergency and the people are prepared to help each other when trouble comes. If it must face up to the red giant again, Clinch County has learned the lesson of preparedness. •

Scorched earth . . .

. . . in southern part of Clinch County is a grim reminder of fire which swept more than 100,000 acres. . . .



1. Sawlog length is cut off . . .

. . . and kicked into log pond; pulpwood log is then reduced to 4 ft. lengths and rides on to loading dock.

2. After sawlog is barked . . .

Hansel chipper make chips of trim and edgings. It is a . . .

Straight Line Operation . . .

for sawlogs, pulpwood and chips in this Southern mill . . .

. . . . and a railroad spur runs the entire length of the mill, paralleling the operation.

This is Union Timber Co., Homerville, Ga., good example of the influence of pulpwood and paper industry on sawmilling in the South. It is laid out with an eye to efficient service for these markets.

"Time was when pulpwood was strictly a sideline and chips were just an idea. Nowadays they are both an important part of my business . . ."

That was Alex Sessoms talking to a PULP & PAPER editor. One of the largest land owners and operators in Clinch County, biggest forest products county in the South, he is owner of Union Timber Co.

He ships six freight cars of pulpwood a week to International Paper Co. He figures 17 cords to the car. He sends an unestimated amount of chips to Union Bag-Camp.

"You learn a lot when you start culling pulpwood from sawlogs and chips enter the picture," he added. "My sawmill is laid out to take care of everything."

Mr. Sessom's company buys whole trees with limbs and tops removed. Logs are carried from the storage yard by single strand chain conveyor to a selecting dock where a supervisor directs the cutting. He measures off that part which will make good sawtimber and the operation proceeds as described above.

Saw logs are carried straight ahead through a Soderhamn D3 whole log debarker.

Features of Two New Chipping Systems in West

A dual chipping system requiring but a single operator is handling chipped residues from Hult Lumber Co's. sawmill and veneer plant at Horton, Ore. The system, designed by Collinson Engineering Co., Portland, Ore., consists of a 66-in. Norman vertical-discharge chipper which elevates chips to cyclone via 60-ft. vertical and 50-ft. horizontal transport. The cyclone delivers to a surge bin at which point chips from the veneer plant (equipped with a 72-in. Sumner vertical-cut veneer chipper) arrive via a 350-ft. Conveyair pneumatic transport. A screw conveyor feeds chips from surge bin to a Sumner screen for conveyor delivery to truck-loading hoppers. Controls for the two-chipper system are by Industrial Components, Inc.

Intermountain Lumber Co. installed a chipping system at Missoula, Mont. which is producing chips for the Waldorf Paper Products' new pulp mill there. This system, also engineered by Collinson to use a 66-in. overhead discharge chipper, converts residue wood from Intermountain's sawmill and stud mill into pulp chips —thus opening up a new wood utilization field in Montana. The company is now adding debarking facilities, including a high-speed 42-in. Nicholson mechanical barker, scheduled for production late this summer.

C. W. Richen, Mgr., Crown Z Northwest Timber Dept. . . .

. . . has been with Crown Zellerbach Corp. since 1939, and for past year administrative asst. to Mr. Stamm. An Oregon State College forestry school graduate, Mr. Richen now has charge of logging-timber management for CZ in Oregon-Washington.

All Wood from Southern and Eastern Limits Comes by Tow . . .
Big boom is being towed through myriad lakes and waterways of this part of Ontario, en route to Dryden mill at outlet of Lake Wabigoon. The East Tow is 30 miles . . . the South Tow is 10 miles. Each supplies about one-third of mill needs.

From Northern Limits, Wood Comes by Truck . . . Photo by Malak
Two trucks are booming along in each direction here . . . note the lumber on one, for Dryden is in lumber and ties as well as pulp and paper. One-third of its wood is from the North, as far as 50 miles. It will be 100 miles in next two years.

How Logging is Done...

on 5,200 Acres of Timberland for Dryden Paper Co.

Dryden, Ont.

• Any extension expansion of a pulp and paper company, as at Dryden Paper Co., puts pressure on the pulpwood production division many months before the additions start up, to build up a bigger woodpile.

The woods division of Dryden, under management of Norman McMillan, has intensified its activities greatly, because Dryden has doubled its production to a total of some 500 tons a day of kraft paper grades and also a high quality market bleached kraft woodpulp, sold to scores of faraway paper mills.

Several weeks ago, when PULP & PAPER visited Dryden, a woodpile of about 70,000 cords had been built up. The mill will use about 250,000 cords a year to make 142,000 tons of pulp and paper products as compared with 150,000 cords before the expansion. Of this about 50,000 cords are pur-

chased from local farmers.

The company operates under a forest management plan, approved by the Ontario Department of Lands and Forests.

Dryden's Crown land timber limits cover some 5,200 sq. mi. of productive area, extending north, south and east of the mill. About 50% is spruce, generally found in the swampy areas of this country, dotted with myriad lakes. The other 50% is mostly jackpine, found in sandy flats and rocky uplands. There is a very small percentage of poplar or aspen, and some 400 peeled cords had been brought in to the mill for experimental runs for making bleached paper grades.

The productive area supports an average of nine cords per acre of pulpwood species. Mature stands yield about 14 cords per acre. Age class distribution is 40% mature, 50% immature and 10% young growth. The company pays the government for ground rent, fire protection and stumpage.

Wood is trucked up to 50 miles (an average of 26 miles) from the north and towed over waterways 10 to 30 miles in the east and south. A fleet of steel tugs haul rafts averaging 2,500 cords per raft. The trucking hauls will extend over 100 miles into the Lac Seul region in the north in the next two years, and with the present expansion, harvesting of wood will approach the annual allowable cut under the agreement with the government to keep regrowth in excess of drain. Trucks are both company owned and hired.

About 25 miles north of the mill, areas were visited where Dryden is endeavoring to carry out controlled burning of slash in order to get better reproduction of jackpine. The heat from fires opens seed cones more rapidly and also opens many that would not otherwise reproduce.

Cutters can earn up to $600 or $700 in good months, and the average is around $400 to $500. They pay $1.75 a day for board and lodging, and one of the new camps visited reveals that these are really high class. Clean, comfortable quarters, running water, inside toilets, showers, recreation room, good food—all these are the rule today for loggers in Ontario. Camps are accessible all year around by all-weather gravel roads.

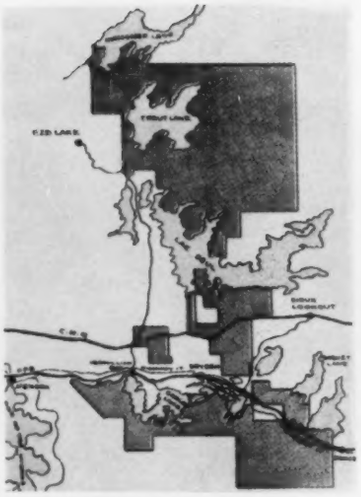
Equipment in Use . . .

For loading trucks from piles, Dryden uses three Lorain (Thew Shovel) cranes and two Bucyrus-Erie cranes, equipped with clams, for dragline operations, and seven combination International TD 9 tractors and Drott Skidloaders. There are 40 tandem trucks in operation, Internationals, Fords and Whites, which carry 6½ to 7 cords a trip on an 18 ft. long deck. A ¾ yd. Bucyrus-Erie crane unloads trucks at the mill.

Power saws are used everywhere on these operations. Two methods of cutting are employed—strip cutting, where a man works separately and piles wood in one cord piles, and cut and skid, where the men work in pairs with a horse, and skid full length logs to a central skidway where they are cut in 8 ft. lengths and piled.

Cutover lands are studied after five years to ascertain if regeneration fails. An experimental annual planting program is conducted. A two-year forestry course is on the curriculum at Dryden high school.

It is interesting that Dryden is named for John Dryden, a Canadian minister of agriculture in the 1890's who saw clover growing along the railroad tracks here and decided it would be a good farming country. Farming is good around the town, but it is obvious that trees are the Dryden area's No. 1 crop.



Dryden Wood Limits . . .
. . . shown in darkened areas of map.

Norman McMillan, Woods Manager . . .
. . . of Dryden Paper Co., wears his standard equipment of hard hat and safety rubbers.

Conservation Course for Students . . .
. . . from Dryden and nearby schools. Here a young lady is being taught importance of forest fire prevention and suppression by Chief Forester BOB BUNNEY.

PULP & PAPER CAMERA TOUR OF DRYDEN PULPWOOD OPERATIONS

Power Saws are Perhaps Greatest Single Advance . . .

. . . in wood production. Man at right is bucking with McCulloch saw; one at left is using I.E.L.'s, made in Vancouver, B.C. And Homelite saws are also used in Dryden Paper Co. operations visited by PULP & PAPER editor, who took these pictures. In one typical operation, two men worked together with saws. One man cuts down the tree and delimbs it, the other drives a horse and after he brings logs to the pile, he cuts them to 8 ft. lengths. Usually, the first man will have opportunities to help his partner in the skidway. . . .

Dragline Loading in Dryden's North Woods . . .

. . . P&P Editor took this shot in woods on private company road 30 miles north of the mill and Canadian East-West highway. This Lorain ½ yd. crane (Thew Shovel Co.) is loading pulpwood from piles. Three of these Lorains are in use, loading up to 200 cords a day; averaging about 140. . . .

Fast-Moving Skidloader Operates Nearby . . .

. . . and it was only a short walk through brush to get this shot. Dryden uses seven combination International TD 9-Drott Skidloaders picking up from Gyppo piles and stockpiles. In this picture this Skidloader is picking up tie blocks as Dryden also makes ties for railroads as well as paper and pulp. . . .

Wood Arrives in Mill Yard . . .

. . . (left) and is scaled by one of the Woodlands Dept. staff at Dryden Paper Co. . . .

And Then It Is Unloaded . . .

. . . (right) by this ¾ yd. Bucyrus Erie 22 B crane in Dryden's mill yard. Its grapple picks up ¾ cord each scoop.

How to Reduce

Power Saw Accidents...

Kimberly-Clark's LongLac mill starts all workers in a special camp with instructor . . . some other useful safety ideas from Ontario

● A new special training program for power saw users introduced by Long-Lac Pulp & Paper Co. Ltd., Kimberly-Clark Corp. subsidiary, has attracted wide interest in the North Woods country.

This is just one of several safety ideas for pulpwood loggers, picked up by a PULP & PAPER editor on a tour of North Woods region of Ontario. They were stimulated by a report at a Woods Safety Conference at North Bay, Ont., where it was disclosed that power saw injuries are increasing. Of saw injuries, 25% occur to the knee, 25% to the leg, 25% to fingers and 25% to other parts of the body.

The LongLac program requires that all new employes must first work one particular camp where there is a power saw instructor. Any employes who have been away from the woods for two years or longer, also must go to this camp.

All of these men are put on an apprenticeship rate and stay at the camp until the saw instructor is satisfied that the man knows how to use his power saw. If he demonstrates this right away, then he is sent immediately to a cutting camp, otherwise he may stay at the training camp for a period up to a week or so. If the wood he cuts in the course of his training is more than the apprenticeship rate would bring him, he is paid at the rate at which he would make the most money.

One of the important phases of this course is that the employe is *told why* he must do things a certain way. A full explanation is made as to what will happen if he uses the saw wrongly.

How Abitibi Takes Care of Saws...

At Abitibi's Iroquois Falls, Ont., operations, the power saw shack has a cement floor, is lined with hardboard and painted with fire-resistant paint. Steel or tin covers all work benches and all are equipped with vises. A ½ hp motor operates the stone and improvised small air compressors clean dirt out of the power saws. Over work benches is a fluorescent lamp. Outside the shack is a steel bench so that if motors have to be started they can be taken outside the shack. No smoking is allowed in the shack.

Power saw blades must be covered when being carried, with covers from papermill canvas for saw blades. The canvas is cut to fit the blade and then riveted.

Another Safety Idea . . .

Trucks for transporting men on Abitibi limits have a horn button inside so that anyone inside the truck can signal the driver to stop in an emergency. The truck also carries special lights signifying it is a personnel truck and there is a first aid kit in the truck.

Men are not allowed to put power saws or gas cans on a horse because if the gas spills it may blister the horse. Saws were checked to make sure that they had screens on. A recommended demonstration: Take the screen off a power saw and run it outside at night. The numerous sparks emitted is very effective in showing workers why they must have screens on their power saws to prevent fires.

The difficulty of getting small contractors and jobbers to take an interest in safety was discussed at North Bay. It was stated that there was some responsibility on the larger companies to help out in this respect because in many cases the larger companies were buying the wood and are paying the Workmen's Compensation assessments of the smaller operators in an indirect way. It was suggested that when agreements are signed with contractors that a safety stipulation be put in and that safety equipment from the larger company be made available to the smaller company.

Saved Lives . . .

The wearing of hard hats in the woods saved over 80 lives in Ontorio in the last four years.

The wearing of buoyant garments on river drive and towing operations were credited with saving five lives last year.

Carthage Hydraulic Log Splitter

The Carthage Hydraulic Log Splitter quarters logs with one stroke – instead of three – and ejects the log so that the machine is always clear for incoming logs. Heavy-duty construction and interlocking safety controls assure safe, positive, trouble-free operation – proved by successful operation of these units since 1950.

Complete range of sizes for logs to 38" diameter and 9' length.

CARTHAGE MACHINE COMPANY

Write for Bulletin 100A.

CARTHAGE, NEW YORK

Continuous Forest Inventory Conducted in Lake States

Here is how Kimberly-Clark Corp. is carrying out a continuous forest inventory of all its Lake States woodlands:

Pairs of one-seventh-acre permanent plots located at intervals of one mile have been established. Each tree on these circular plots is measured, numbered and recorded on special electronic machine cards designed by the woodlands staff of Kimberly-Clark.

Data on diameter, height, quality, soundness and vigor are taken on each tree. For each plot, an area description also is recorded to show cover type, size class, density, site, age and soil type. The plots also contain information on any planting, cutting and silvicultural treatment.

All information is punched onto cards which the electronic machines can read. The same plots will be remeasured at regular intervals and the data compared to provide the continuous current inventory.

This year 390 plots were set up in Minnesota, 366 in the Michigan, with a total of 19,000 trees. Similar plot information was gathered in Marquette, Munsing, Newberry and Pickford districts of Michigan as 582 plots were set up, covering 15,000 trees. Remaining districts in Michigan and northern Wisconsin will be completed next summer.

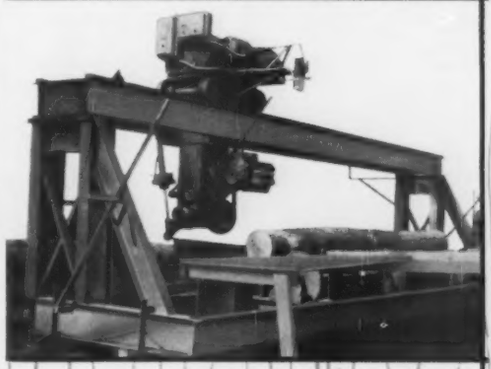
Top Timberland Job at West Virginia Goes to Nick Lenhart

D. Y. "Nick" Lenhart is now general manager of timberlands and real estate division of West Virginia Pulp and Paper Co. He succeeds W. J. Bailey, vice president, who has retired.

Some 850,000 acres of timber, mostly in South and North Carolina will be under his direction; also the wood procurement program which supplies Westvaco's six mills with more than 1,500,000 cords of pulpwood and the forest research program at its 20,000 acre outdoor lab in South Carolina.

Mr. Lenhart started as a district forester in 1937 in Georgetown, S.C., for Westvaco, has been active in pulpwood procurement programs, moved to the New York office in 1952 as general mgr. of woodlands. He graduated from Pennsylvania State Forest School in 1927, did graduate forestry work at North Carolina State College.

. . . turn wood waste into profit



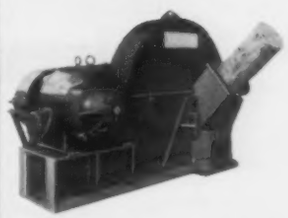
Jackson Log Barker . . .

The Jackson BEAVER log barker is designed for economical use at saw mills cutting as little as 7M board feet a day. However, in tests, this barker has cleaned logs at the rate of 18M feet a day, Doyle Scale. Elimination of fast wearing parts is a feature giving low maintenance cost.

with

Jackson

WASTE UTILIZATION EQUIPMENT



Model CP 51 Chipper . . .

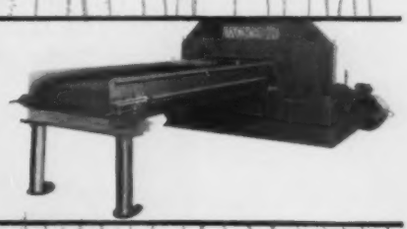
Jackson's all-welded steel Core Chipper handles round cores and pulpwood up to 11 inches. Also available is Model SE 48 for slabs and edgings to 15 inches horizontally fed.

Chip Screen . . .

Jackson's all-steel chip screen's four-bearing mounting and combination decks assure extra years of service. Jackson chip screens are available in various sizes to suit any type operation.

Veneer Chipper . . .

Jackson's all-steel veneer chipper produces chips of ideal size for paper mill and hardboard requirements. Jackson's superior construction means long life at low maintenance cost.

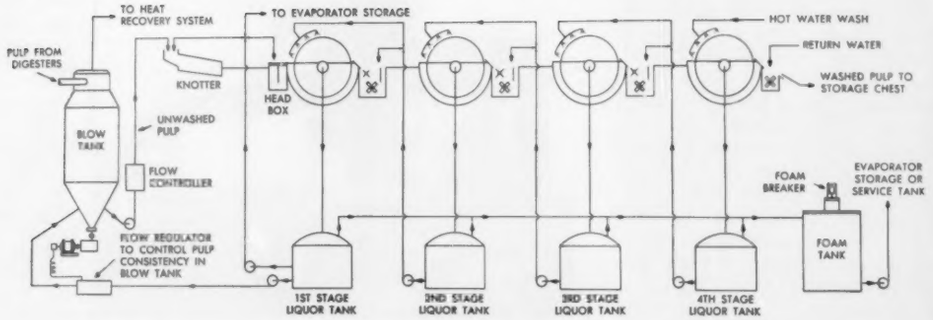


JACKSON INDUSTRIES INCORPORATED

VENEER MACHINES DIVISION

Birmingham, Alabama

The four stage Oliver Brownstock Washing System with four Washers, similar to that employed at Dryden Paper Company Limited. All of the major equipment units in the Brownstock Washing Flowsheet are supplied by Dorr-Oliver.



Another Complete Dorr-Oliver System

for Dryden Paper Company Limited

...New 300 ton 4 stage Oliver Brownstock Washing System with adjoining Dorr Continuous Recausticizing System at Dryden, Ontario Mill.

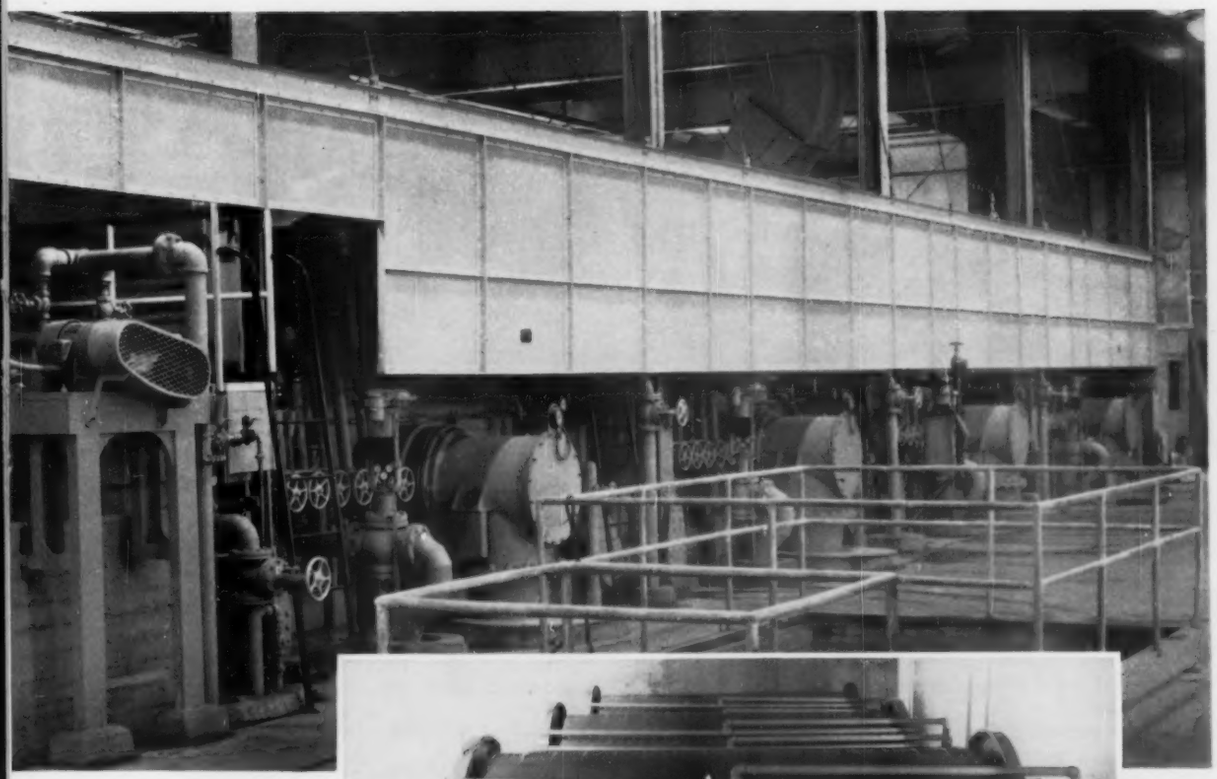
In full operation after a March 1957 start-up, this 300 ton 4 stage Oliver Brownstock Washing System plays an important role in Dryden Paper Company's multi-million dollar expansion program. With the Dorr Continuous Recausticizing System in the new Dryden, Ontario mill, the Oliver Brownstock Washing System produces bleached northern kraft pulp, while outside temperatures occasionally drop to minus 48°F.

In the heart of the Oliver Brownstock Washing System are four, 11′6″ dia. x 16′ face, 55F9 Oliver cone valve washers; each with a hydraulic capacity of over 10,000 gpm.

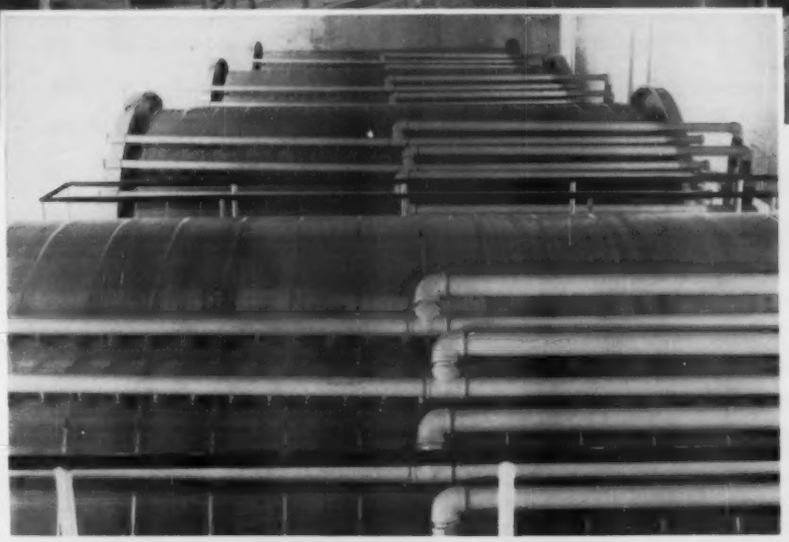
At Dryden, where the annual capacity is anticipated at 142,000 tons, additional Dorr-Oliver pulp and paper equipment includes an Oliver Sheet Former and an Oliver Valveless Decker.

For more complete information on the Oliver Brownstock Washing System write for a copy of Bulletin No. 3303, Dorr-Oliver Incorporated, Stamford, Connecticut; or better still let us send a Dorr-Oliver engineer to discuss your specific filtration or washing problem with you, placing at your disposal the wealth of information accumulated through our 35 years of Brownstock Washing experience.

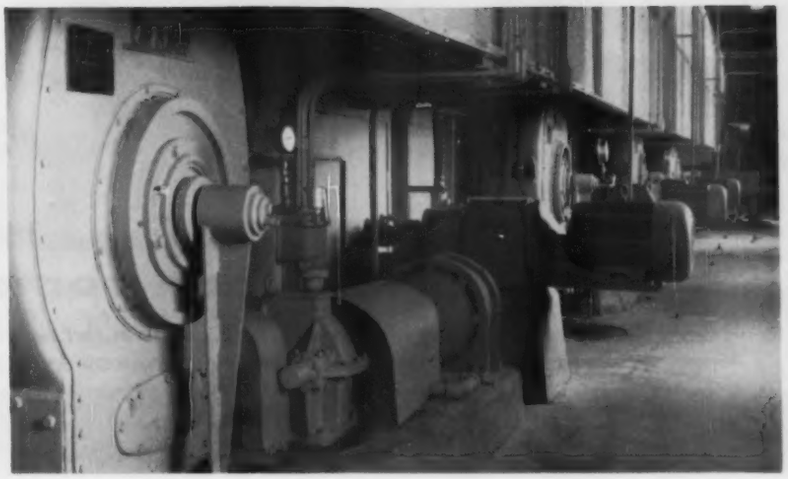
DORR-OLIVER
INCORPORATED
WORLD-WIDE RESEARCH • ENGINEERING • EQUIPMENT
STAMFORD • CONNECTICUT • U.S.A.



View of Oliver Brownstock Washing System at Dryden, Ontario enclosed under a hood.



Elevated view of the Oliver Washers illustrating the Nycoe Nozzles, wash pipes, and headers.



Drive end view of the four 55F9 Oliver Cone Valve Washers at Dryden. Note the rugged cast iron washer drive in the center foreground.

West End **SALT CAKE** merits your confidence for its consistent purity

Here is the new high standard of salt cake quality achieved by exclusive West End production techniques and controls. The product is pure white and exceedingly low in heavy metal content. It is guaranteed 99½% minimum Na_2SO_4 yet actually runs 99.75% to 99.8% Na_2SO_4 typically. We invite your attention to the adjacent typical analysis and welcome your communication.

TYPICAL ANALYSIS

Na_2SO_4	99.5% or better
Na_2O	.05% max.
B_2O_3	.05% max.
NaCl	.07% max.
Insoluble	Trace
Loss on ignition	Less than 0.1%
Solution	Clear
Color	White

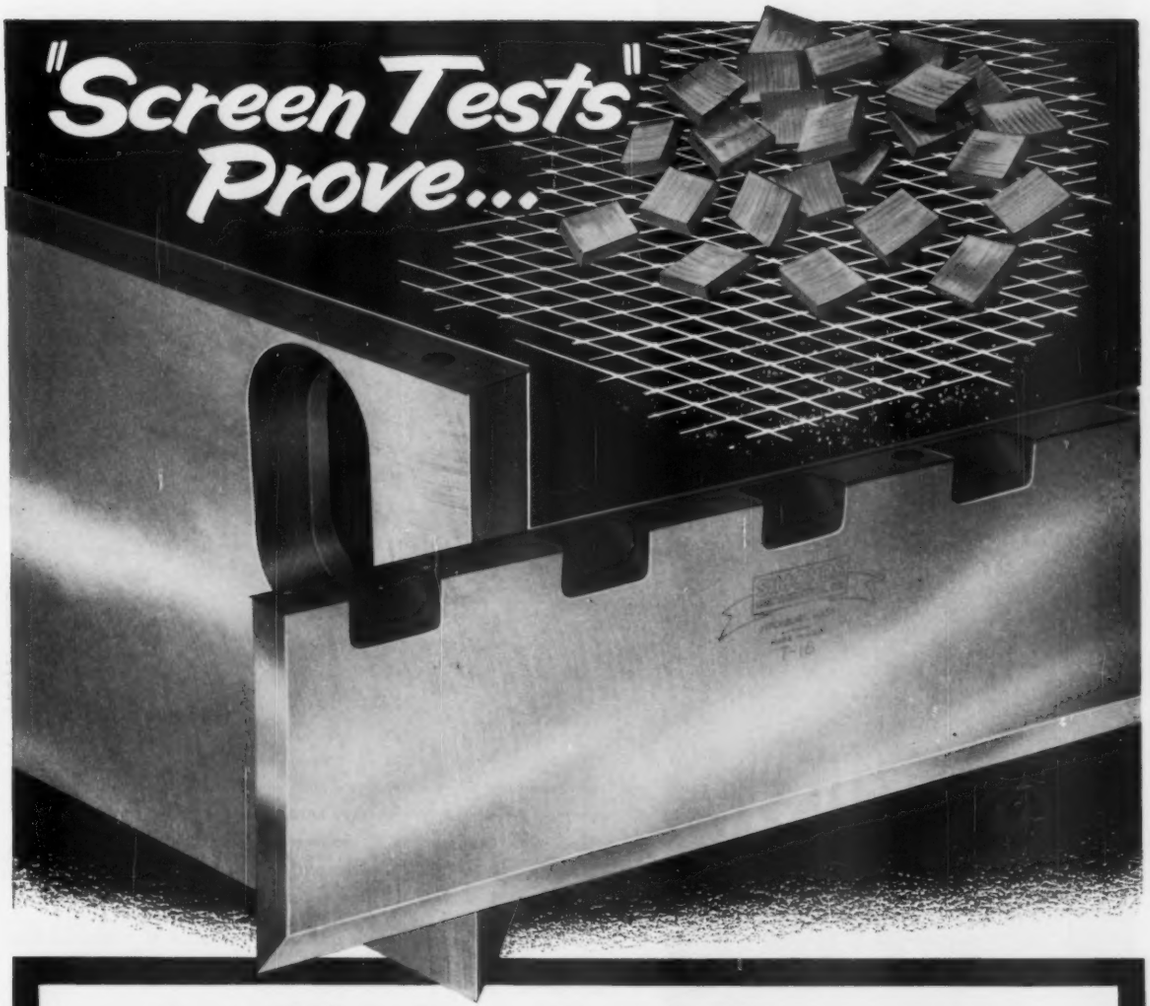
WEST END

West End Chemical Company

DIVISION OF STAUFFER CHEMICAL COMPANY

EXECUTIVE OFFICES, 1956 WEBSTER, OAKLAND 12, CALIF. • PLANT, WESTEND, CALIF.

SODA ASH • BORAX • SODIUM SULFATE • SALT CAKE • HYDRATED LIME



For Chips in Good Shape — use SIMONDS T-18 CHIPPER KNIVES

More usable chips with less dust through the screens means a lower percentage of waste, greater chip yield and more efficient woodroom operation.

You get this with Simonds T-18 Steel Knives because they are extra tough, take high speeds and heavy cuts, have extra resistance to dulling which causes bruised chips and excess dust.

Put Simonds T-18 Knives on the job and *your* screen tests will show more and better chips, less dust, LOWER COST CUTTING.

125 years of growth 1832-1957

SIMONDS SAW AND STEEL CO.

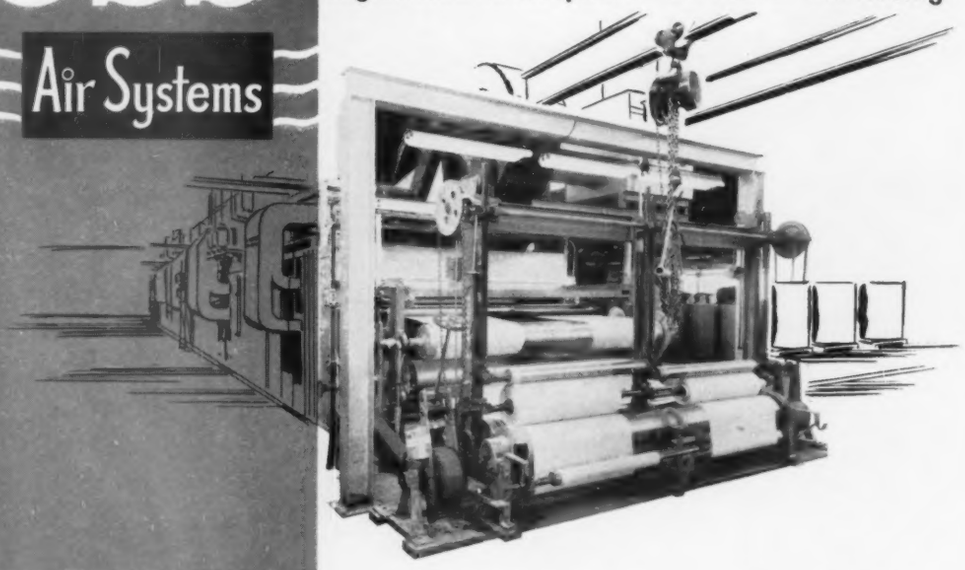
FITCHBURG, MASS.

Factory Branches in Boston, Chicago, Shreveport, La., San Francisco and Portland, Oregon
Canadian Factory in Montreal, Que., Simonds Divisions: Simonds Steel Mill, Lockport, N. Y., Heller Tool Co., Newcomerstown, Ohio
Simonds Abrasive Co., Phila., Pa., and Arvida, Que., Canada

ROSS

Air Systems

Engineered Atmospheres for Better Processing



A MUST...

proper drying of the 'web' after a coating conversion

Web Drying is not a routine operation . . . or shouldn't be so considered. In the many converting plants where Ross Engineers have designed the drying systems, they have never found two problems alike. Drying temperatures . . . required rates of drying . . . and the kind of heat to be used . . . methods of handling into, through and from the units all vary . . . often pre-setting as well as drying is needed. Curing, if necessary, presents other problems.

In every respect, the atmosphere within a dryer has to be 'engineered' for each job. It is not routine air-conditioning. Rather, it is a problem of determining the necessity of and then integrating the many contributing factors to provide *the* controlled atmosphere that will produce the best *conditioned web* for converting or best *finished web* after converting.

This is the kind of service Ross Engineers have been giving the paper and film converting industry for some thirty five-years. They would have a wealth of experience to apply to *your* problem. And working with the company's affiliate, John Waldron Corporation, New Brunswick, N. J. they would be in position to design and install the entire converting—drying—curing system. This has been done many times.

If you are planning a new conversion project or to modernize your present operations, why not discuss plans with a Ross Engineer to be sure that all steps are covered satisfactorily.

THE ROSS GROUP OF COMPLEMENTING SERVICES

J. O. Ross Engineering Corporation, New York
Andrews and Goodrich Division, Boston
Ross Engineering of Canada Limited, Montreal
Ross Midwest Fulton Corporation, Dayton
Carrier-Ross Engineering Company, Ltd., England
John Waldron Corporation, New Brunswick, N. J.

J. O. ROSS ENGINEERING CORP.

444 Madison Avenue • New York 22, N. Y.
ATLANTA • BOSTON • CHICAGO
DETROIT • LOS ANGELES • SEATTLE

New...60 pages of helpful, practical facts you can use for *better bleaching results*

SECTIONS INCLUDE:
(PARTIAL LIST ONLY)

1. Bleaching stages, procedures, and systems
2. Bleaching procedures by types of pulps
3. Hooker chlorination system
4. Hooker chlorine system
5. Sodium hydroxide system
6. Calcium hydroxide system (lime milk)
7. Sodium chlorate system
8. Continuous sodium hypochlorite production
9. Continuous calcium hypochlorite production
10. Chlorine dioxide—methods of production
11. Equipment and materials of construction

For reference in planning a new bleachery—or in getting the most out of your present one—you'll find this new 60-page Hooker manual invaluable.

It sums up for you the most significant recent developments in pulp bleaching, as well as older, established bleaching procedures. It is fully referenced to the technical literature, completely indexed, concisely written by John D. Rue and other members of the Hooker technical staff.

Its 52 illustrations include flow charts of the various processes for generating chlorine dioxide; chlorination systems; automatic system for producing calcium hypochlorite; systems and equipment for handling chlorine and caustic soda.

Tables help you estimate installed costs of continuous hypochlorite processes; compare costs of the various chlorine dioxide processes.

For your copy of this useful manual, please drop us a note or simply write "Bulletin 200" and your name on your business letterhead.

HOOKER ELECTROCHEMICAL COMPANY
1911 Forty-Seventh St., Niagara Falls, N. Y.

HOOKER CHEMICALS PLASTICS

DUREZ® PLASTICS DIVISION • NORTH TONAWANDA, N. Y.
NIALK® CHEMICALS • NIAGARA FALLS, N. Y.
OLDBURY® CHEMICALS • NIAGARA FALLS, N. Y.

Sales Offices: Chicago, Ill.; Detroit, Mich.; Los Angeles, Calif.; New York, N. Y.; Niagara Falls, N. Y.; Philadelphia, Pa.; Tacoma, Wash.; N. Tonawanda, N. Y.; Worcester, Mass. *In Canada:* Hooker Chemicals Limited, N. Vancouver, B. C.

RHOADS

Since 1702 . . . Pioneers in Mechanical Power Transmission

WHERE THE JOB SELECTS THE BELT

In the Rhoads "family" there are now *three* distinct types of beltings — leather beltings; all synthetic beltings of fabric and plastic; and leather beltings with a nylon core (see details below). Each is built to Rhoads standards of quality and each has a record of proved performance in particular fields of power transmission.

Back of these three distinct types of beltings is Rhoads Engineering — an organization of specialists in mechanical power transmission, whose business it is to learn precisely *all* the conditions under which the belt must work and *all* the details of the job to be done . . .

Based on this information, and against a background of broad experience, Rhoads Engineering works with the customer or the belting engineer, (1) on the selection of the proper type of belting, and (2) on the development of a belt that is engineered to meet each condition and to do the job at hand most efficiently and economically.

The job selects the belt.

Let us tell you more about the Rhoads "family" of beltings. And more about Rhoads Engineering, and what it can mean to you in better performance in power transmission on every type of job . . . from the smallest spindle drive in a textile mill to the smooth, unbroken flow of power for a lineshaft-driven papermaking machine . . . and under every condition, from water and moisture through dust and oil to steam, high temperatures, or excessive dryness. Address Engineering Department, J. E. Rhoads & Sons, Wilmington 99, Delaware.

Tanastic

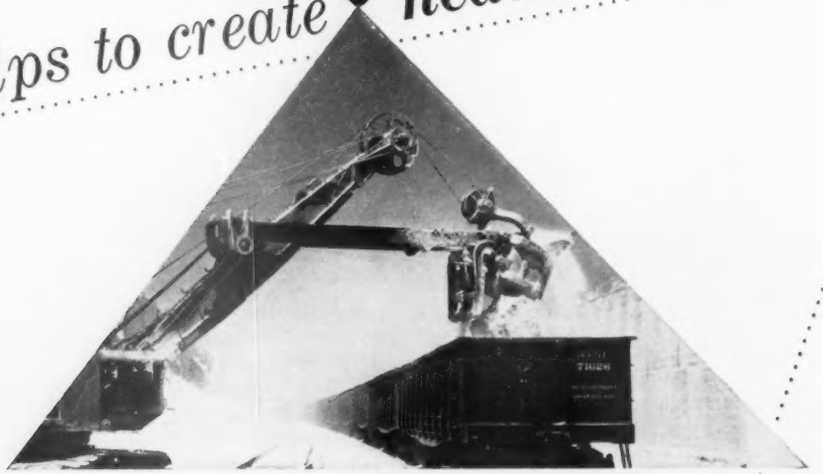
with the strength of nylon . . . the grip of leather

TANASTIC — newest member of the Rhoads family of beltings is the leather/plastic which provides an elastic, stretch-free belt that holds its driven speed for the life of the drive, without tension adjustment.

TANASTIC's greater tensile strength, from its core of nylon, permits narrower widths . . . reduces costs. High friction coefficient allows shortest center distances. Well-adapted to multiple pulley drives, crossed quarter-turn and cone drives. With TANASTIC, you can use pulley ratios as high as 20:1 . . . at contact arcs as low as 90° . . . with speeds to 10,000 fpm . . . at capacities to 500 hp and over!

SULPHUR

helps to create headline products



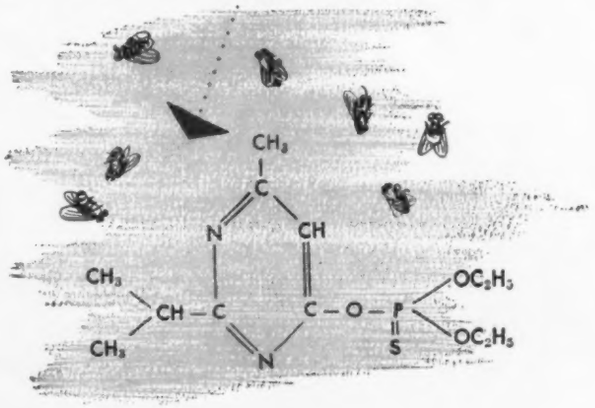
DIAZINON*

What a 'killer' this complex chemical is turning out to be! And quite impartial as to its victims: — houseflies, barnflies, fruitflies, aphids, mites, ants, beetles, chinch bugs, roaches, and many other pests that bother man and beast. It kills them dead!

As with the former chemicals which made such notable headway in man's fight to subdue these destructive pests, Sulphur is very much in the picture—here is one of the many variations of the benzene ring . . . the Diazinon Formula. That letter "S" tied in with the letter "P" discloses the all-important thiophosphate.

Sulphur, often called one of the Four Pillars of the Processing Industry, is benefiting mankind in many ways. None is more important than that of controlling crop-destroying pests.

**A product of the Geigy Chemical Corporation.*

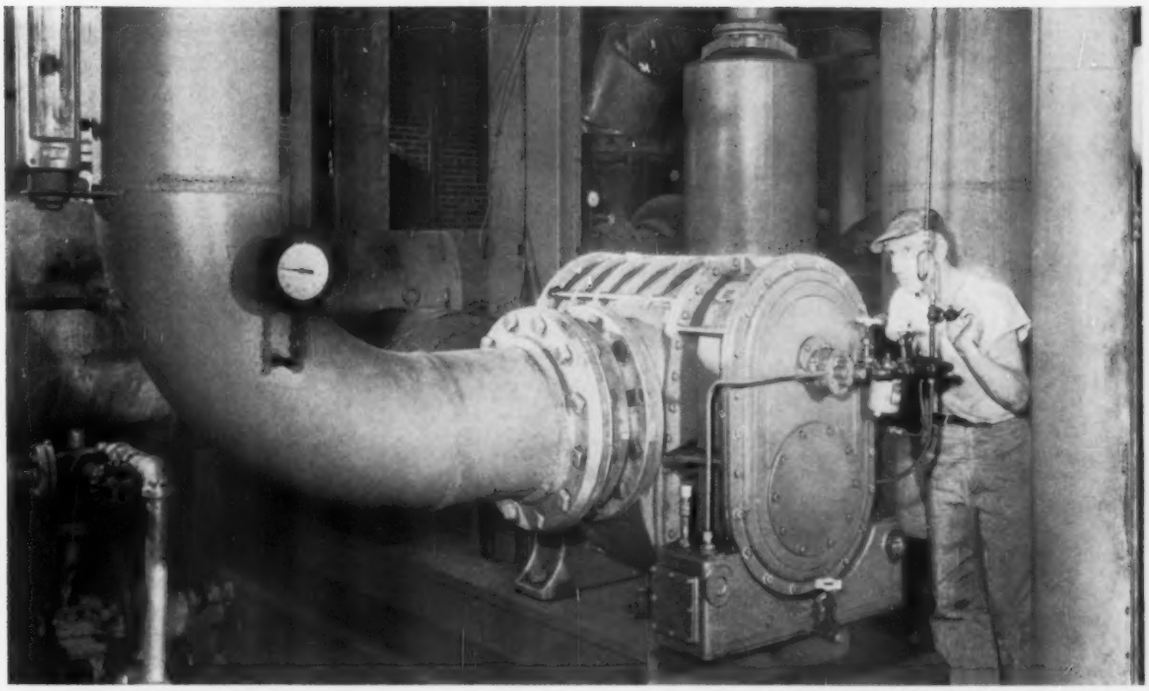


Texas Gulf Sulphur Co.

75 East 45th Street, New York 17, N. Y.
811 Rusk Avenue, Houston 2, Texas

Sulphur Producing Units
- Newgulf, Texas
- Moss Bluff, Texas
- Spindletop, Texas
- Worland, Wyoming

Most compact compressor of its type . . .

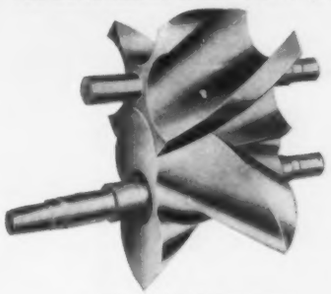


AXI-COMPRESSOR in an industrial plant

Use the

*Axi-compressor**

for pressure and vacuum . . .
for air, gases, vapors



Rotors of Axi-Compressor

If you are looking for a compact, efficient source of pressure or vacuum, investigate AXI-COMPRESSORS: they provide greater output per pound of unit. AXI-COMPRESSORS may be operated efficiently over a wide range, with low power consumption.

Rotors are of cycloidal form, screw type. They operate with clearances of a few thousands of an inch, but never touch . . . there's no need for internal lubrication.

Operating advantages of this axial-flow, positive-displacement unit includes the following:

1. Compact, rugged construction
2. Smooth, shockless flow
3. No metal-to-metal contact in compression chamber
4. Operating speeds that permit direct-connected drivers in many cases
5. Oil-free delivery
6. Good efficiency over wide range

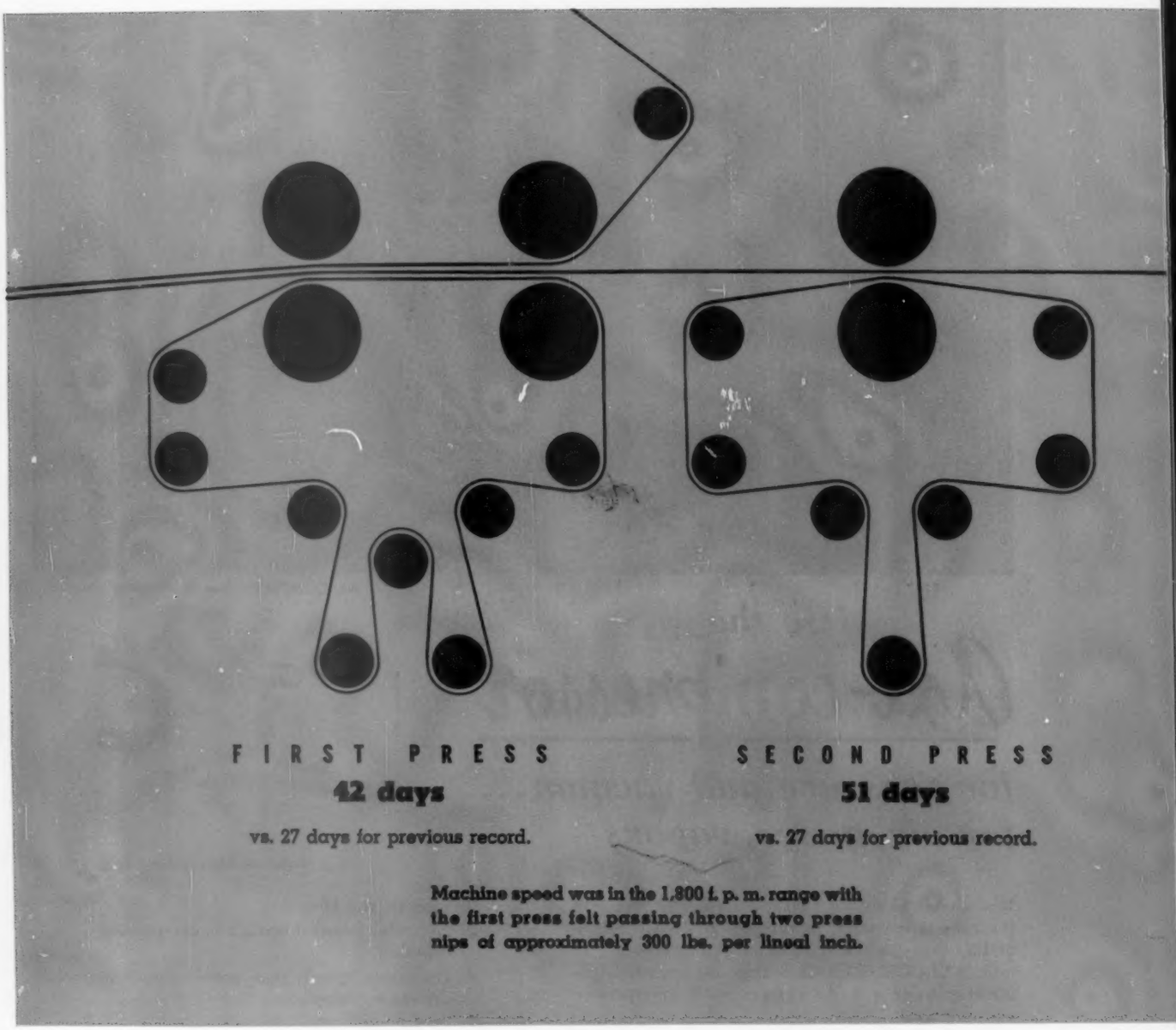
For complete information on the AXI-COMPRESSOR line for pressures from 25-inch vacuum to 15 psi, capacities from 100 cfm to 15,000 cfm . . . contact your Ingersoll-Rand compressor specialist. Performance curves available in Bulletin 11,001 . . . write for it.

*Axi-compressor
. . . formerly "Standardaire"

Ingersoll-Rand
17-663 11 Broadway, New York 4, N. Y.

PUMPS • CENTRIFUGAL & RECIPROCATING COMPRESSORS • DIESEL ENGINES • AIR & ELECTRIC TOOLS • TURBO BLOWERS • STEAM CONDENSERS

A Record Any



FIRST PRESS

42 days

vs. 27 days for previous record.

SECOND PRESS

51 days

vs. 27 days for previous record.

Machine speed was in the 1,800 f. p. m. range with the first press felt passing through two press nips of approximately 300 lbs. per lineal inch.

FREE HANDY REFERENCE CHART

for determining width changes for cocked and bowed felts. Write for yours today.

Papermaker Would Like to Set...

At the left, you see *two* remarkable felt service life records set by a major mill using *new* Huyck felts.

The mill reports that other *new* Huyck felts, installed since the record runs were made, are continuing this exceptional life and performance.

As the Mill Superintendent says: "We feel that this performance record has been achieved through the cooperative efforts of a number of our people working with those of Huyck".

Give your machines the opportunity to perform outstandingly. Consult your Huyck Sales or Field Service Engineer.

F. C. Huyck & Sons,
Rensselaer, N.Y.:
Alicevilla, Ala.;
Peterborough, N. H.;
Cavendish, Vt.:
In Canada:
Kenwood Mills Ltd.,
Arnprior, Ontario.

NEW **HUYCK FELTS** ☆ INDUSTRIAL FABRICS

FIRST IN QUALITY...FIRST IN SERVICE SINCE 1870

Making the best defoamer is not enough...

It has to be the best for YOU

Every paper mill must control foam—with the greatest possible efficiency—at the lowest possible cost. And since each mill differs so widely from every other mill, Nopco's Paper Division spares no effort to make certain we have a defoamer—whether paste, liquid, or flake—that will effectively, economically control foam in *your* mill.

But making the best defoamers is not enough. Nopco's technical staff has the breadth of experience that can be invaluable to you in fitting the right defoamer to your special needs. These men will work with you in your own mill, examine samples of white water from your mill in our laboratories, or do both.

You can't be sure you've attained *maximum defoaming efficiency at the lowest cost per ton* until you have the best "team" in the business, the Nopco technicians, prescribe from the widest range of defoamers in the business—the Nopco defoamers. Write today for a free booklet on Nopco defoamers. Nopco Chemical Company, Harrison, New Jersey.

NOPCO

PLANTS: Harrison, N. J.
Cedartown, Ga. • Richmond, Calif.
London, Canada

PULP & PAPER

Strictly Personal

Northeast . . .

Memo from MRC . . .

We had lunch with a chap in New York the other day and between the soup de jour and the pie, we spotted several "brothers" of the pulp, paper and paperboard fraternity dining in the same spot. Has anyone ever thought of calling New York Cellulose City– It certainly might warrant such honor when you think of the number of companies with executive or sales offices here. Paper City Holyoke, look to your laurels. . . .

Turnout has been good for the first two meetings of Metropolitan TAPPI and should continue. The next meeting on Nov. 12 will theme wet end felts. Out-of-town visitors to New York are welcome to spend an evening exchanging ideas the second Tuesday of each month at Fraunces Tavern. For directions getting there, just call PULP & PAPER. . . .

DICK OSBORN, former technical director, Finch, Pruyn, moves up north to Millinocket, Maine as t.d. for Great Northern. . . . DRS. FRED FROST and JOE THOMAS, S. D. Warren Co., still talking about the big ones they caught off Cape Cod. A 105-lb. tuna and a 225-lb. shark. . . . BEN MILLARD has joined Warren's research group, from U. of New Hampshire where he was physical chemistry prof. . . .

BOB JOHNSON, lately with P. H. Glatfelter Co., moves over to Hamilton Paper Co.'s tech. dept. . . . DICK BORKOWSKI, formerly with Scott, joins Bob as electrical engineer at Hamilton. JOHN MACALLISTER is new power and maintenance supt. for Hamilton. . . . Moving "south" from Windsor Mills, Ont. is JIM ALLEN to Container Corp.'s Manayunk, Pa. chem. lab. . . .

Thomas B. McCabe, Jr., Director of Advertising, Scott Paper Co. . . . most recently served as product group mgr. in Scott's advertising dept. MARSHALL CLARK, former advertising director, moves to England as resident marketing coordinator for Scott's English affiliate, Bowater-Scott Corp. Ltd. N. W. MARCUS succeeds Mr. McCabe at the company's Chester, Pa., headquarters. PETER P. MILLER is new coordinator of foreign marketing of Scott affiliates in Canada and Mexico.

"Now that doesn't look too difficult to fix. What is it—diesel or gas?"

WILLIAM W. GALVIN JR. has joined C. H. Dexter & Sons, Inc. as v.p. and sales mgr. . . . RICHARD W. HOLMES takes over as sales mgr., eastern div., for E. F. Houghton & Co. . . . JOHN W. CHURCHILL, who formerly headed particle board research for Timber Engineering Co., is now chemical engineer on the tech service staff of West Virginia Pulp and Paper Co. at Tyrone, Pa. He will help develop the Tyrone flakeboard plant due for a 1958 start-up. JOHN W. HOLDSWORTH is sales mgr. for Westvaco's new building boards div. with headquarters in Tyrone. . . .

RICHARD A. WARNER joins Riegel Paper Corp. as industrial relations coordinator and ROBERT P. FUNKE becomes personnel director of the New York office. . . . ISAAC R. DUNLAP moves from New Brunswick, N.J. where he helped develop saturated papers for Permacel Tape Corp., to Brown Co.'s research and development dept. at Berlin. Job: to direct research and development of Onco products. . . .

BOB O'CONNOR, APPA's exec sec., has moved into his new home in Greenwich, Conn. . . . HOWARD L. BOMBARD has been promoted to pulp prep tour foreman at Finch, Pruyn & Co. Inc.'s Glens Falls, N.Y. mill. . . . Many VIP's were on hand when LYMAN A. BEEMAN, president of Finch, Pruyn dedicated the new neutral sulfite pulp mill in August which will use Adirondack hardwoods to produce upwards of 100 tons of pulp a day. Congratulations–and the best of luck. . . .

Elected new chairman of Connecticut Valley Supts. Div. is THOMAS J. FLAHERTY, supt. of Lydall & Foulds mill. New first vice chairman is BEAMIS P. WOOD, asst. to production v.p. of Strathmore Paper Co. Next year when Mr. Wood becomes chairman, he will also be third v.p. of the National Supts. New second vice of Connecticut Valley Supts. is CHARLES O. HOSTERMAN, pulp and paper supt., Champion-International. JOE KELNER, H. Waterbury & Sons, continues as secy.-treas., and DICK MCKAY, Holyoke Wire, as affiliates' chairman.

Southern . . .

Memo from WFD . . .

The Southern Exposure: HAROLD MURDOCK, who was one of the top men responsible for getting the pulp and paper industry in Japan back on its feet after World War II, is off on another jaunt for the government–this time he and CHARLES BOYCE, paper industry economist, will study conditions in Indonesia for the ICA, make recommendations as to how American government aid might best be used to start up the industry in this island-scattered country. . . .

JOHN H. SYMES is the new asst. pulp mill supt. at Owens-Illinois' Valdosta mill. He comes from Big Island, where he was formerly chief chemist. BENNO J. BEAU takes his place at Big Island. Also new at Valdosta: appointment of ALBERT GRAYSON as mgr. of the multiwall bag plant; promotion of D. J. (JOE) BRETT, JR., to personnel mgr. of Owens-Illinois mill div. at Toledo. FOSTER COLEMAN, personnel mgr. at O-I's Waco, Tex., mill moves up to Valdosta to take his place. . . .

JOHN C. KEEGAN was promoted to staff

The stoutest pipe vise . . . with built-in folding legs and tray

RIDGID

Tristand Pipe Vise

Extra easy to fold up, carry and set up . . . Extra strong, extra rigid in use

Most service and durability for your money! Integral legs and tray mean quick easy fold-up for carrying and set-up for work—provide solid stance, greater strength. Vise base is roomy, has ceiling brace screw, pipe benders, slots for tools. Special LonGrip jaws grip tight without chewing up pipe. Save work—see it, try it, buy it at your Supply House.

Every RIDGID Pipe Tool TESTED individually before shipment

RIDGID Tristand Pipe Vise, yoke model.

Chain model also available.

The Ridge Tool Company, Elyria, Ohio, U. S. A.

RIDGID

Work-Saver Pipe Tools

asst. for personnel administration for the mill and multiwall bag divisions of O-I and for National Container Corp. and will transfer to the company's general offices in Toledo, O. For the past year he has been asst. insurance mgr. at National Container's Jacksonville, Fla. plant, previously was personnel mgr. at Valdosta. . . .

W. R. CRUTE, who headed Texas operations of Champion Paper many years, now has title of "honorary vice president" and is working on special assignments. He has been retired for some time. . . . DUNCAN GAY COKER, son of R. G. COKER, secy. and vice pres. in charge of engineering, Sonoco Products Co., was married recently to Mathe D. Trautmann of Glen Ridge, N. J. . . .

BILL OSGOOD, now mgr. of Valentine Pulp & Paper in Lockport, La., is justly proud of his son who'll soon don the uniform of an Air Force jet pilot trainee. . . . HOYT JOHNSON, recent mech. engr. graduate of U. of S.C., has joined the engineering staff of Olin Mathieson's Ecusta Paper div. at Pisgah Forest, N.C. . . . PAUL G. WILLIAMS, formerly with Owens-Corning Fiberglas Corp., has taken over as administrative asst. of Calcasieu Paper Co., Inc., with his office in Jacksonville, Fla. . . . another new addition at Ecusta Paper Co.: industrial engineering graduate J. HARVEY WILKIE, alumnus of North Carolina State. . . .

SAMUEL L. HAYES, mgr. of southern district of Ciba Co., Inc., with headquarters in Charlotte, N.C., was guest of honor at a dinner in New York recently, at which DR. H. MARSHALL, president of the company, presented him with a gold watch commemorating 25 years of service at Ciba. Mr. Hayes was born in Thomasville, Ga., and is a graduate of Virginia Military Institute. He also completed the chemical engineering course at Massachusetts Institute of Technology. His first job with Ciba was mgr. of the Greenville, S. C. office. . . .

Victor P. Tabaka, Vice Pres., Administration, Gulf States Paper . . . was also elected a director of the Tuscaloosa, Ala., firm. Mr. Tabaka has been a consultant for Gulf States for the past four years and was professor of business administration at Emory University, Atlanta, and owner-director of Victor Tabaka Associates, management consultants.

PULP & PAPER — Strictly Personal

MERLE K. SIEBER was appointed branch mgr. of Reliance Electric & Engineering Co. in Charleston, W.Va. Mr. Sieber joined the company in 1950 after graduating from Penn State. . . . FRED FLOYD takes over as prod. supt. at the Louisiana mill in Bastrop. He fills vacancy left by J. L. OSWALT's transfer to Pine Bluff. GUY BABIN is asst. technical director at the La. mill and LEONARD JENKINS has been promoted to chief chemist. . . . Recent new appointments at Pine Bluff: BENNY CLUBBS, UME supt. and FRED BRADSHAW, personnel dir., already located at Pine Bluff on construction. . . .

In the limelight: E. E. ELLIS, civic-minded mgr. of IP's Natchez mill, was recently elected president of the Natchez Kiwanis Club. He'll take over the first of the year, after directing activities for the fabulous children's Halloween party, given to the kids at Natchez every year . . . and J. R. (JIMMY) LIENTZ, Union Bag-Camp v.p. and mgr. at Savannah, heads up the advance gifts div. for United Community Services in Savannah. . . .

Promotions Announced in Manufacturing Management

GEORGE J. KNEELAND has been elected asst. vice president of St. Regis Paper Co. and will serve as assistant to BENTON R. CANCELL, executive vice president. Mr. Kneeland, who has served as production coordinator since 1954, will continue that function.

WALTER H. POLLARD, independent consultant, has joined the company as consultant and assistant to Mr. Cancell.

JOHN A. MCDERMOTT, who has been supervisor of all St. Regis paper mills, has been appointed general manager of all pulp and paper manufacturing. He joined St. Regis in 1928 and served at Herrings and Oswego, N. Y., and Tacoma, Wash., mills until 1952 when he was transferred to Jacksonville, Fla.

U. J. WESTBROOK, who has been supervisor of all pulp mills, has been appointed manager of kraft pulp and paper manufacturing. He joined St. Regis in 1941 at its Pensacola, Fla., mill, and later was general supt. there and Southern division production manager.

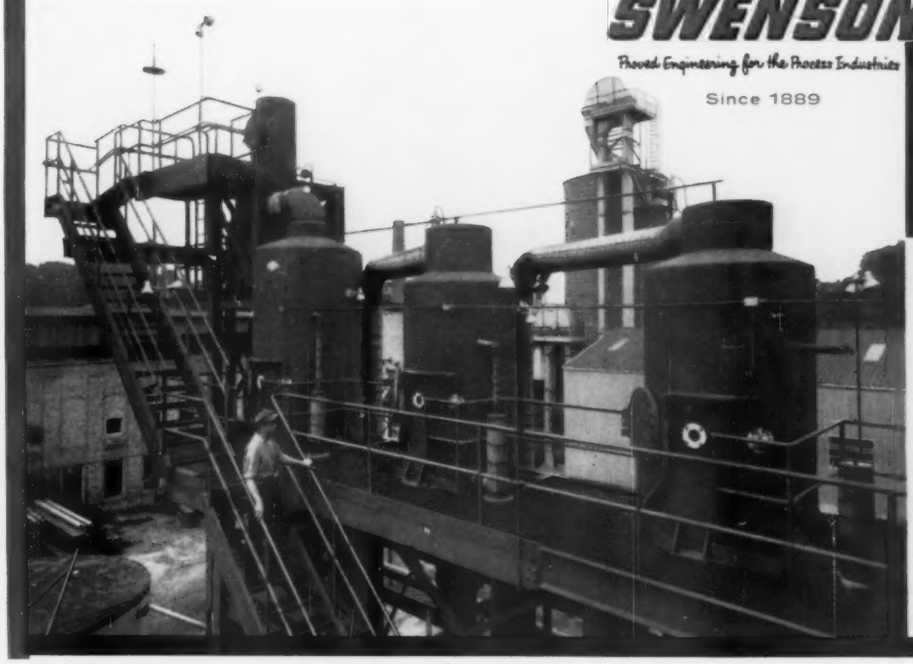
NSSC EVAPORATION

The Swenson forced circulation triple effect evaporator at Watervliet Paper Company, Watervliet, Michigan, concentrates recovered solids from the production of 50 tons per day of NSSC pulp. The design embodies features necessary to avoid the scale ordinarily encountered with these liquors. Swenson has both forced circulation and natural circulation evaporator systems concentrating NSSC liquors and combinations of NSSC and Kraft liquors.

There's a Swenson evaporator for practically every concentration need. Write today for full information on custom-designed, custom-installed evaporators by Swenson. *Swenson Evaporator Company, Division of Whiting Corporation, 15632 Lathrop Avenue, Harvey, Illinois.*

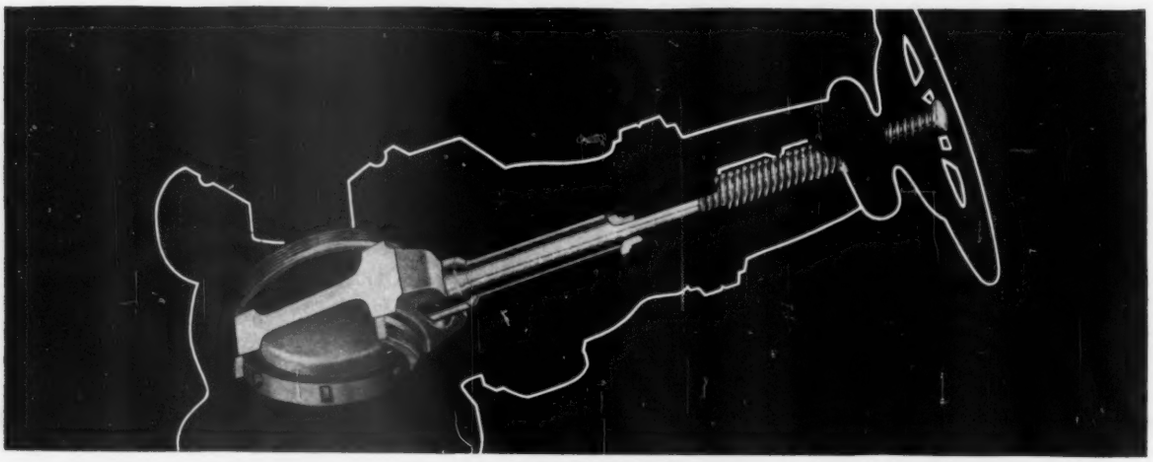
SWENSON
Proved Engineering for the Process Industries
Since 1889

A Division of WHITING Corporation



in the Walworth No. 725FS

VITAL PARTS



DEFY CORROSION

Here you see the inside story on how Walworth helps combat corrosion problems for the pulp and paper industry. Every internal part of the No. 725FS Wedge Gate Valve, subject to the fluid, is made of materials which have high corrosion resistance to caustic fluids. The vulnerable wedge disc is made of Walworth W308 Ni-Resist Cast Iron for long life and foolproof service. The body seat rings are constructed of corrosion-defeating 18-8 stainless steel—and so are the stem and back seat bonnet bushing.

For complete information on this corrosion-resistant wedge gate valve, see your Walworth Distributor or write: *Walworth Company, 60 East 42nd Street, New York 17, New York.*

WALWORTH

60 EAST 42nd STREET, NEW YORK 17, N. Y.

DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD

WALWORTH SUBSIDIARIES: ALLOY STEEL PRODUCTS CO. • CONOFLOW CORPORATION • GROVE VALVE AND REGULATOR CO. M&H VALVE & FITTINGS CO. • SOUTHWEST FABRICATING & WELDING CO., INC. • WALWORTH COMPANY OF CANADA, LTD.

Strictly Personal

Midwest . . .

Memo from DGC . . .

T. M. (Ted) Gilbert, president, chairmanned a 70th anniversary party recently for Gilbert Paper Co., Menasha, Wis., which was attended by 130 customers and mill staff, with about 40 of the latter included. John D. Schmerein, secy. and adv. mgr., chairmanned arrangements and talks were by Thomas C. Catlin, vice pres. and production mgr., and Don J. MacLaurin, general supt. Don recently took over this post after serving as technical director. . . .

William R. Maull, director of sales service for The Mead Corp. since 1945 and former vice pres. and gen. mgr. of the Dill & Collins mill, Philadelphia, when it was merged with Mead, has retired. He was 37 years in the industry and pioneered development of offset papers. Paul E. Phillips, who started with Mead 29 years ago as stencil boy in shipping, moves up to director of sales service from assistant and Philip C. Evanoff becomes associate director. The latter started with Mead in the Dill & Collins mill in 1933 as lab technician. . . .

Catching up with Who's Who at the International Falls mill of Minnesota & Ontario Paper Co.: Bill Schlafge, gen. mgr.; Fred Boeckh, asst. gen. mgr.; Paul Bartholomew, technical director; Norman Jurgensen, gen. supt.; Ernie Gustafson, resident engineer; William C. Rindsland, asst. chief engineer for the company, under Jim Davidson, chief (who is in Minneapolis); Lucius "Lute" Evenson, paper mill supt.; Bill Martin, chemical pulp supt.; Adam Pollock, sulfite and bleachery supt.; Harold Maxness, kraft and woodroom supt.; Bill Cook, coating research. That isn't all, of course, but others have been mentioned in previous reports here. . . .

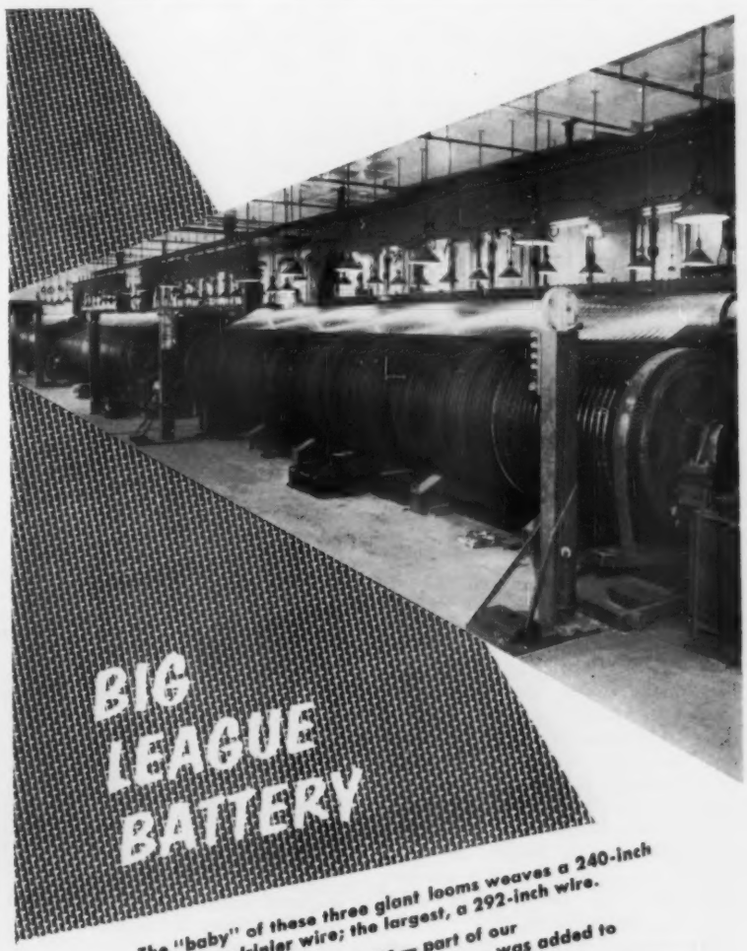
Addison (Pete) Koblentz has retired as asst. to supt., No. 1 Paper Mill, The Mead Corp., Chillicothe, O. He was with Mead 47 years and relates how Mike Ludwig first called him in to work when he was 17 years old on a night shift, after he had been shucking corn that day for 12 hours. He broke his hip some months ago, and is taking things easy. . . .

Bob Callahan, top man for Mead Pulp sales in the Middle West, and his wife, May Ann, have welcomed a new family addition—AnnMarie. This is No. 2, as they have a son, Michael. They live at 1315 Oak, Evanston, Ill. . . . Robert Wolter, from the Mead organization in Ohio, has joined Bob in the Chicago pulp sales offices. . . .

A. Rodney Boren, vice pres., Mead Corp., Dayton, O., was elected a director of the National Paperboard Assn. A native

Power at International Falls

Henry Stormo is new supt. of electric power, Int. Falls, Minn., mill of Minnesota & Ontario Paper Co., and Norman Selsaas moved up to asst. supt. A Southern Minnesotan, Mr. Stormo has been with M & O since 1916 and replaces Oscar Sandstrom, retired.



The "baby" of these three giant looms weaves a 240-inch width fourdrinier wire; the largest, a 292-inch wire.

This latest battery of looms — part of our continuing modernization program, — was added to serve the demand for increasingly large wires.

However, much smaller wires are still important to the greater part of the paper manufacturing industry, and our efforts are directed to producing — regardless of size — the very finest wires our 79 years of experience allow us.

EASTWOOD-NEALLEY CORP. BELLEVILLE NEW JERSEY

The DRAPER Felt
DRAPER BROTHERS COMPANY
CANTON, MASS.

of Dayton, Mr. Boren graduated from Kenyon College and was a lieut. commander in WW II. He, his wife and two children live in Oakwood. . . . GRANT C. COOPER was promoted to mgr., production scheduling dept., says C. H. REESE, v.p. mfg., Nekoosa-Edwards Paper Co., Port Edwards, Wis. THOMAS F. BOLES succeeds Mr. Cooper as scheduling supervisor. . . .

WILLIAM B. MEYER, national sales mgr. of Kimberly-Clark's printing and writing paper div., was class president of recent graduate school on sales management and marketing at Rutgers University, New Brunswick, N.J., sponsored by the National Sales Executives Club and Rutgers. . . . JAMES W. TAYLOR has joined the engineering dept., Consolidated Water Power & Paper Co., as a meter and instrumentation engineer, announces M. V. MOLSBERRY, chief engineer. A native of Bellwood, Pa., Mr. Taylor graduated from Penn State in 1950. He has been manager of Bailey Meter Co.'s Milwaukee office since 1953. . . .

JAMES SCHAD is new asst. to supt. of paper machines at Consolidated Water Power & Paper Co.'s Biron Div., Wisconsin Rapids, Wis. A grad of N.Y. State College of Forestry, Mr. Schad joined Consolidated in 1955. . . . New appointments for Reliance Electric & Engineering Co., Cleveland, are CLAYTON Y. GOSS, Dayton branch mgr.; JOHN P. LANDIS, branch mgr. in Appleton, Wis.; and NORWOOD F. JOY, branch mgr. in a newly-established office in Bangor, Me. . . . EUGENE THOMPSON, former gen. salesman for the New York branch of Stein Hall & Co., Inc., was appointed gen. sales representative to its Chicago office. . . .

The Miami Valley div. of the Superintendents Assn. installed the following officers for 1957-58: DON GOODMAN, The Sorg Paper Co., Middletown, O., chairman; WILLIAM R. ZIMMERMAN, Moraine Paper Co., West Carrollton, O., 1st vice-chairman; JAMES OZIAS, Oxford-Miami Paper Co., West Carrollton, O., 2nd vice-chairman; R. A. BUCK, The Sorg Paper Co., secy. and treas.; and W. T. CRANNELL, Patton Manufacturing Co., Springfield, O., divisional industrial affiliate representative. . . . HUGH MEILINGER, asst. personnel director for Escanaba Paper Co., Escanaba, Mich., married a girl from his home town (Mansfield, O.) in September and honeymooned in Florida before returning with his bride to Escanaba where they will live. . . .

SIDNEY FROHMAN, 76-year-old pioneer in the corrugated box industry and chairman of Hinde & Dauch Paper Co., Sandusky, O., retired recently but will continue as a director and consultant . . . HILDUR OLSON began her secretarial duties with Escanaba Paper Co. over 25 years ago. She was secretary to division manager E. G. BENNETT before he retired and now is right hand for GEORGE DOUGLAS. . . .

EUGENE VAN SLAMBROUCK has joined the Product Design and Development Dept. at Ahdawagam board division of Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis. . . . The Central Regional Office of Ebasco Services Inc., managed by R. H. BRADFORD, has moved to the Field Bldg., 140 S. Clark St., Chicago 3, Ill. . . . Hyster Co.'s new manufacturing plant at Danville, Ill, when completed, will house all of Hyster's Danvile operations, according to JAMES L. WOODLEY, manager of the present plant in Danville. The first section is scheduled for completion in March, 1958. . . .

J. F. GSCHWIND, is moving from Dayton, O., to New York to head the research and development dept. of J. O. Ross Engineering Corp. as vice president. Mr. Gschwind received his technical training at Swiss Federal Polytechnicum in Zurich and has been with Ross for over 20 years. He developed the Airay Oven, Ross Pulp Dryer and designed and/or built most of the early Supertherm plants in this country. ROBERT M. COOK, associated for many years with automatic temperature control and condensate drainage systems for paper machines, succeeds Mr. Gschwind as vice president and general manager of Ross Midwest Fulton Corp. in Dayton. . . .

Richard Brams, (left) Tech. Rep for Container Art Service . . .
. . . in the Chicago territory, was formerly sales mgr. Mr. Brams served in the European theater during WW II and graduated from the U. of Illinois in 1950. He was formerly PR and Adv. Mgr. of Stone Container Corp., Chicago.

L. R. Tharp (right), Asst. Sls. Mgr., Detroit Sales, E. F. Houghton . . .
. . . moves from Houghton's Chicago office to Cleveland. He has specialized in hydraulic and transmission sales engineering work.

They Learned About Felts

Papermaker "graduates" of recent Huyck Felt Workshop No. 2, held at F. C. Huyck & Sons, Rensselaer, N. Y.: BILLY J. MOORE, Fleming & Sons; STANLEY GLOWACKI, Colonial Board Co.; MILTON MALANEY, International Paper Co.; ROBERT J. SMITH, West Va. P and P Co.; WILLIAM WELSH, JR., W. C Hamilton & Sons; J. A. BREWER, Ecusta Paper; CLYDE SHUFORD, Ecusta; LAWRENCE COOK, West Va.; ROBERT L. TYNDALL, Northwest Paper Co.; JAMES H. OZIAS, Oxford-Miami Paper Co.; LESLIE DOLHOF, Finch, Pruyn; JOHN NOLAN, W. C Hamilton & Sons; H. B. CAMPBELL, No. Carolina Pulp; WILLIAM WISEMAN, Brownville Board Co.; A. H. SAMPLE, Fleming & Sons; WILLIAM EMORY, Fraser Paper Ltd.; C. A. LAMB, Kimberly-Clark; LLOYD J. WHIMS, Ohio Boxboard; A. R. SUTTON, Quaker Oats Co.; and BERSEY MARPLE, West Va.

More workshops are planned (applicants write Huyck).

In hot or cold wood handling . . .

GRADALL LOADS 19 TRUCKS DAILY

For R. H. Currier, Gorham, New Hampshire contractor, a single Gradall with exclusive positive control grapple loads more wood with less manpower and does the job faster.

Although often required to move from one yard to another, the Gradall loads 19 trucks with 7 to 7½ cords a load—*133 to 142 cords a day* of either frozen or unfrozen wood. And, no labor is required on the ground to guide the grapple or to gather the wood into full-load bunches. Loads are spotted more accurately, there are fewer lost "bunches" and trucks are completely filled.

Find out for yourself how the self-propelled Gradall with simple, foolproof arm action can reduce your pulpwood handling costs. Arrange for a demonstration with the Gradall Distributor in your area.

Gradall®
DIVISION OF WARNER & SWASEY
© Reg. U.S. Pat. Off.

MAIL COUPON BELOW FOR FREE LITERATURE ON NEW GRADALL GRAPPLE

Gradall Division—Dept. PP-11
WARNER & SWASEY COMPANY
5701 Carnegie Avenue
Cleveland 3, Ohio

Please send me free literature on faster pulpwood handling by positive control grapple Gradall.

*Name*_____ *Title*_____

*Company*_____

*Address*_____

*City*_____ *Zone*____ *State*_____

ANHEUSER-BUSCH, INC.

Sign of highest quality for the

PAPER INDUSTRY

GUMS
For tub sizing, coating and calendering.

STARCHES
Standard and special for beaters, tub sizing, coating and corrugating.

DEXTRINES
For coating, laminating and paper converting.

GELATINIZED STARCH
For beaters.

Corn Products Department
General Office • St. Louis, Missouri
721 Pestalozzi St.

Sales offices . . .

NEW ORLEANS, LA.
314 Girod Street

COLUMBUS, GA.
2319 Hamilton Rd.

KALAMAZOO, MICHIGAN
1122 Royce Avenue

SAN FRANCISCO, CALIF.
1485 Bay Shore Blvd.

NEW YORK, NEW YORK
33rd St. and 12th Ave.

CAMBRIDGE, MASS.
111 Sixth Street

CHICAGO, ILLINOIS
750 So. Clinton

PHILADELPHIA, PA.
Bourse Bldg.

SAVINGS FOR PROFIT . . . with FULLER

Because materials handling . . . however important in your daily operations . . . is a non-productive function, the best way to keep costs down is to install a conveying system best suited to your bulk handling requirements. A Fuller pneumatic system may be the answer—clean and efficient, requiring minimum attention and maintenance.

Fuller offers three basic systems to accomplish savings in handling dry pulverized and granular materials: Airveyor®, Fuller-Kinyon System, and Fuller Airslide®. Leading companies in your field, and many others, are using Fuller engineered systems to profit through important economies.

Fuller offers you more than thirty years of specialized experience in pneumatics. Write today for detailed information on Fuller Systems and unbiased materials handling advice.

FULLER COMPANY GENERAL AMERICAN TRANSPORTATION CORP.

Fuller

. . . . pioneers in harnessing AIR

A-231
4658

FULLER COMPANY

128 Bridge St., Catasauqua, Pa.

SUBSIDIARY OF GENERAL AMERICAN TRANSPORTATION CORPORATION

Birmingham • Chicago • Kansas City • Los Angeles • San Francisco • Seattle

Strictly Personal

New Institute Trustees

W. R. ADAMS, president of St. Regis Paper Co., and P. H. GLATFELTER III, president of P. H. Glatfelter Co., are newly elected trustees of the Institute of Paper Chemistry, to serve 5 year terms. They succeed STUART R. KAY, vice pres., International Paper Co., and HERBERT T. RANDALL, vice pres., Champion Paper & Fibre Co., both of whom served many years and were ineligible to succeed themselves under Institute by-laws.

Clifford R. Crawford (left) has resigned as President

of the Black-Clawson Co. He is now vice chairman of the board. He began as an engineer with Shartle Bros. 48 years ago, became chief engineer in 1918, then a v.p. of Black-Clawson in 1939.

Frank T. Peterson (right) is new Pres. of Black-Clawson

He joined in 1947 as sales engineer, is an engineering graduate of Syracuse U., became executive vice president in 1954, has been spearheading overseas activities for Black-Clawson.

Pacific Coast . . .

Memo from LHB . . .

RAY BENNETT, West Coast sales mgr. operating out of Appleton, Wis., and DON DE NOYER, vice president of engineering, both of Appleton Machine Co., were touring Coast mills in recent weeks. . . . R. J. (BOB) SIEDL, from the Pulp and Paper Division, U.S. Forest Products Laboratory, Madison, Wis., has joined Simpson Paper Co., Everett Wash., as director of research. . . .

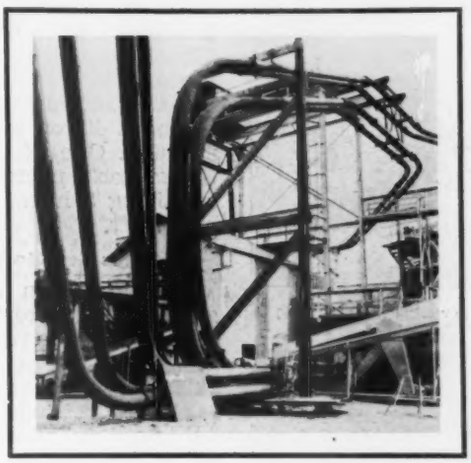
Black-Clawson Co's. western offices, located for many years in the Mayer Building, recently moved a few blocks into modern new quarters at 1632 S.W. Morrison Street, Portland, Ore. GORDON PETRIE, Western sales manager, says this location is conveniently situated just outside the downtown congested area and provides additional office facilities and space for the staff which has tripled in the past decade. . . . Western offices of R. T. Vanderbilt Co., Inc. in Portland, Ore. have also been relocated at 1632 S. W. Morrison Street where additional space and facilities are provided according to Western Mgr. DOUG ARMSTRONG.

Recently retired at Crown Zellerbach Corp. are HUGH E. BURDON, office mgr., Camas, after 47 years, and W. S. BOUTWELL, chief electrical engineer, West Linn, after 33 years. . . . HARRY W. HUNTSMAN, resident mgr., CZ's Los Angeles plant, died recently at the age of 51. . . .

Northwest Pulp & Paper Assn. held its annual election of officers. HOWARD W. MORGAN, vice president of Weyerhaeuser Timber Co., was re-elected as association president; RON RICHARDSON, Pacific Northwest public relations representative of Crown Zellerbach Corp., was elected vice president succeeding the late R. W. Wertheimer; re-elected were Secy.-Treas. LAWSON TURCOTTE, president of Puget Sound Pulp & Timber Co. and Exec. Secy. VINTON W. BACON. . . .

ZINA A. WISE, Sr., (57) president of Griffith Rubber Mills, died Sept. 19 while on a San Francisco business trip. The

RADER HANDLES EIGHT JOBS WITH TWO HANDS



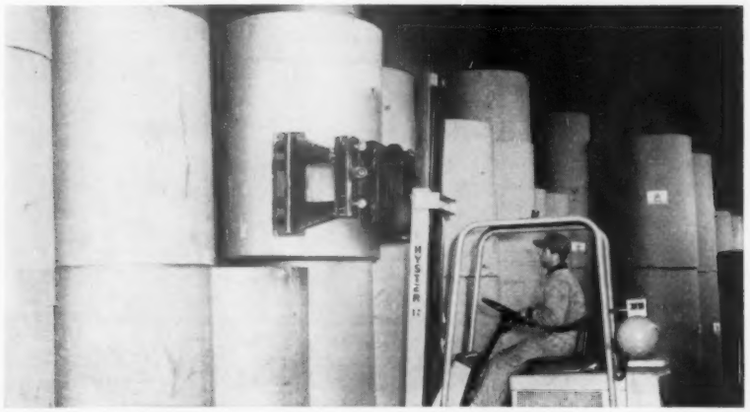
Two Rader pneumatic conveyors do the work of eight ordinary installations in this system, operating at Longview Fibre Co., at Longview, Washington. Two pipes speed chips to a storage pile at one end of the plant, two to a pile at the other end. Two others transport chips to the screen room in the plant, the others feed digester storage. Chip flow can be diverted through the lines by swift, easy-operated valves that take only a moment to switch. The versatile lines take the most convenient route to their destinations, climbing vertically to carry their loads over the tops of buildings and around the many obstacles in a pulp mill. Many types of valve systems are available for each individually-designed Rader job. There virtually is no limit to the distances or delivery problems that can be overcome with a Rader pneumatic conveyor.

RADER PNEUMATICS, INC.

1739 N. E. 42nd Avenue Portland, Oregon

Vancouver, B.C. 4645 Main St. | Preston, Ont. Canada | Eureka, Cal. Box 61 | Boston, Mass. No. 10 High St. Rm. 716 | Memphis, Tenn. Box 3722 Municipal Airport

TWO LIFT TRUCKS LOAD 40-TON CAR IN 35 MINUTES



Rolls are stacked on dock in temporary storage.

Rotating roll to vertical while traveling saves time.

Rolls loaded on end in boxcar.

ANTIOCH, CALIF. — At the Kraft paper plant of Crown-Zellerbach Corporation, two 5000 lb. capacity Hyster lift trucks, with Paper Roll Clamps, load cars 16 hours per day completing a 40-ton car every 35 minutes. One of the Hyster trucks stacks paper during the remaining 8 hours of the 24-hour shift.

Rotates Rolls to Vertical

Rolls are taken in the horizontal position from floor conveyor, rotated to vertical while moving and set on end in car for shipment or on dock in temporary storage. Rolls vary from 40″ to 56″ dia. and from 18″ to 86″ in length and weigh up to 3000 lbs. Both Hyster trucks are equipped with LP-Gas fuel system, and Revolving Paper-Roll Clamps.

Hyster® materials handling methods streamline handling procedures, increase production and lower costs. Your Hyster Dealer keeps up with materials handling progress in your area. Call him today—for help with your production methods.

Call your Hyster Dealer. He is in the yellow pages under "Materials Handling" or "Trucks-Industrial"

HYSTER COMPANY

Hyster Industrial Trucks Increase Profits for Pulp and Paper Plants

Factories: DANVILLE, ILL. • PEORIA, ILL. • PORTLAND, ORE. • NIJMEGEN, THE NETHERLANDS • GLASGOW, SCOTLAND • SAO PAULO, BRAZIL • SYDNEY, AUSTRALIA*

*Under License

Portland, Ore. industrialist became manager of Griffith Rubber Mills in 1933 and president in 1951. Under his leadership the firm acquired a wholly owned subsidiary in Seattle and an affiliation with a Vancouver, B.C. mill. He was also president of Wise Products, Inc. and associated with Oregon Insurance Finance Co. He is survived by his widow, Harriet Griffith Wise, and two sons, Zina A. Wise Jr. and Franklin Griffith Wise, all of Portland. . . .

JOSEPH R. FRUM, former asst. vice pres. of Crown Zellerbach Corp.–from which he retired in November 1956 after 38 years with the organization–and supervisor of Portland land and tax department, died Aug. 29 of heart attack. He was a member of Forest Industries Council, Oregon Forest Fire Assn., Oregon Tax Institute and the Recreation and Natural Resources Committee of State Chamber of Commerce.

OLIN ROTH, formerly of Simpson Timber Co., becomes personnel manager of Simpson Paper Co. . . . A. H. LINDQUIST formerly of Fibreboard Products' San Joaquin div., joins engineering staff of Potlatch Forests at Lewiston. . . .

Ambassador and Mrs. J. D. ZELLERBACH spent six weeks vacationing in San Francisco Bay area before returning to Rome in October. . . .

Anderson . . . . . King

Promoted at Longview Fibre Co.

. . . N. H. ANDERSON, formerly purchasing agent, becomes asst. to mill mgr., supervising purchasing and paper order dept.

L. C. KING advances to purchasing agent.

Canada . . .

Memo from CLS . . .

LESLIE JONES, son of DOUG JONES, executive secretary of the Technical Section of the Canadian Pulp and Paper Assn., was recently married to a Montreal girl. Among industry friends on hand were Doug Jones' brother-in-law, ROLAND LECLAIR, who is now based in Chicago, representing Dryden Paper Co. products, including bleached pulp, in Midwest states, with DON SMITH, Dryden's manager there. . . .

WALTER J. COLLINS has been named personnel director at Hooker Chemicals new North Vancouver, B.C., plant, ac-

Denman . . . . . Stamm

Crown Z Honors Retiring Exec.
E. P. STAMM, vice president for Northwest CZ timber operations, views telegram, displayed by Senior Vice Pres. D. S. DENMAN, from Pres. A. B. LAYTON announcing changing name of Crown's 78,000 acre Columbia tree farm to Edward P. Stamm Tree Farm.

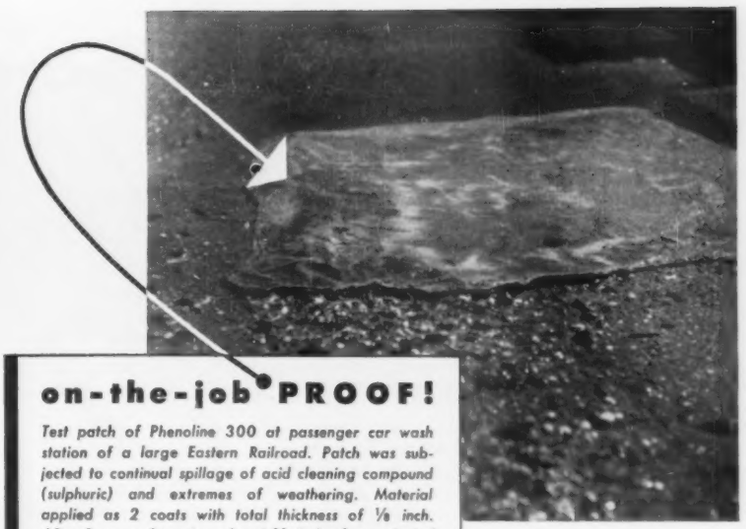
cording to ROBERT E. NOBLE, works manager. Mr. Collins was formerly a personnel assistant in the industrial relations department of Hooker Electrochemical Co. at Niagara Falls, N.Y. . . . JOHN G. MORRISON, former asst. Mgr. of the Fort William, Ont., mill of Abitibi Power & Paper Co., has been appointed manager cently after 23 years' service. . . .

RALPH M. SHAW, vice pres. of MacMillan & Bloedel, Vancouver, B.C., since 1949, has advanced to the presidency, succeeding H. S. BERRYMAN, who was advised by doctors to accept a less exacting role because of continued illness. Mr. Shaw, 51, has been with the company most of his business career, and has been directing sales for many years. Mr. Berryman continues with the company in an advisory capacity. B. M. HOFFMEISTER is chairman of the board.

PAUL E. COOPER, former pres. of Crown Zellerbach Canada and now exec. vice pres. of Sandwell & Co., has been appointed general chairman of Univ. of British Columbia building fund in Vancouver, B.C. . . . CY WOODS, mgr. of MacMillan & Bloedel's office in Seattle since 1941, has moved back to Portland, Ore., where he previously was in charge.

P. R. (DICK) SANDWELL, head of Sandwell & Co., Vancouver consulting engineers, supervising projects on several continents, was recently presented with a plaque by United Air Lines in recognition of his traveling the equivalent of 40 times around the world by air. He is the first "million miler" in Western Canada.

JOHN E. LIERSCH, former Powell River. Co. vice pres. in charge of forestry and logging, has been named to the new position of exec. vice pres. He started his career with the old Crown Willamette organization in Washington and Oregon, returning to British Columbia to log and later become head of Univ. of B.C.'s forestry department. He joined Powell River Co. in 1947 as forestry engineer. . .



on-the-job PROOF!

Test patch of Phenoline 300 at passenger car wash station of a large Eastern Railroad. Patch was subjected to continual spillage of acid cleaning compound (sulphuric) and extremes of weathering. Material applied as 2 coats with total thickness of ⅛ inch. After 1 year of service, almost ½ inch of unprotected concrete had corroded away. Phenoline-protected concrete remained unaffected with bond of Phenoline to concrete still perfect.

PHENOLINE 300

protects concrete...

under severe corrosive conditions

Structural weakening . . . hazardous footing . . . accumulation of water and corrosives . . . expensive replacement. These are a few of the costly results when floors, pump bases and other concrete areas are not protected from corrosion. This wasteful destruction can be prevented—even under very severe corrosive conditions—with Phenoline 300.

- **Highly resistant to acids, alkalies, solvents.**
- **100% solids.**
- **Can be applied over new or old concrete, brick or wood.**
- **Fast thermo-setting at room temperature—no baking required.**
- **Easy to wash down and keep clean.**
- **Protects against back-pressure and seepage.**
- **Can be troweled, brushed or sprayed.**
- **Available in any color.**

WRITE TODAY *for new Phenoline 300 Series Bulletin, 4" x 4" sample of troweled Phenoline, corrosion data and prices.*

carboline COMPANY

A Division of Mullins Non-Ferrous Castings Corporation

Specialists in Corrosion Resisting Synthetic Materials

349 Thornton Ave., St. Louis 19, Mo.

"coating-conscious"?

use Clinton® starches

For over 30 years, Clinton starches and dextrins have helped satisfy "coating-conscious" paper makers.

Clinton is just as interested in coatings as you are. Why? Because a coating — *any coating* — is no better than the adhesive that holds it together and binds it to the paper. Clinton starches and dextrins do an admirable job in both respects.

And if it's "size-satisfaction" you're looking for, Clinton starches are sure to measure up to your most hopeful expectations.

. . . and remember technical service in connection with your specific problems is available without obligation

Quality products

FROM THE WORLD'S CORN CENTER

CLINTON

CLINTON CORN PROCESSING COMPANY
CLINTON, IOWA

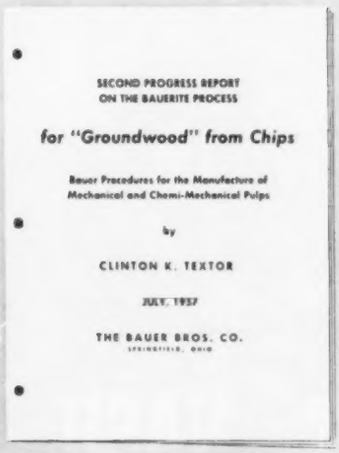
Our 50th Anniversary Year 1907-1957

Electronics engineer D. P. Michel traces digestive cycle for C. K. Textor on Bauerite Process control board bound for a new mill in the Far East.

These Controls May Change Our Geography

This control panel is the center of the *automatic* Bauerite Process for making "groundwood" pulp from chips.

While this process will not alter international boundaries, it is capable of changing the world's geography of newsprint manufacture. Mills in areas having wood currently considered unsuitable for groundwood may now use their existing hardwood supplies *profitably*.


SECOND PROGRESS REPORT
ON THE BAUERITE PROCESS

for "Groundwood" from Chips

Bauer Procedures for the Manufacture of Mechanical and Chemi-Mechanical Pulps

by

CLINTON K. TEXTOR

JULY, 1957

THE BAUER BROS. CO.
SPRINGFIELD, OHIO

Practically all wood species available in volume sufficient for pulp have been investigated in the United States and Canada. The resulting data and information obtained from commercial installations are presented in Bauer's "Second Progress Report on the Bauerite Process," by C. K. Textor.

May we send you a copy of this informative report?

The Bauer Bros. Co.

Springfield, Ohio

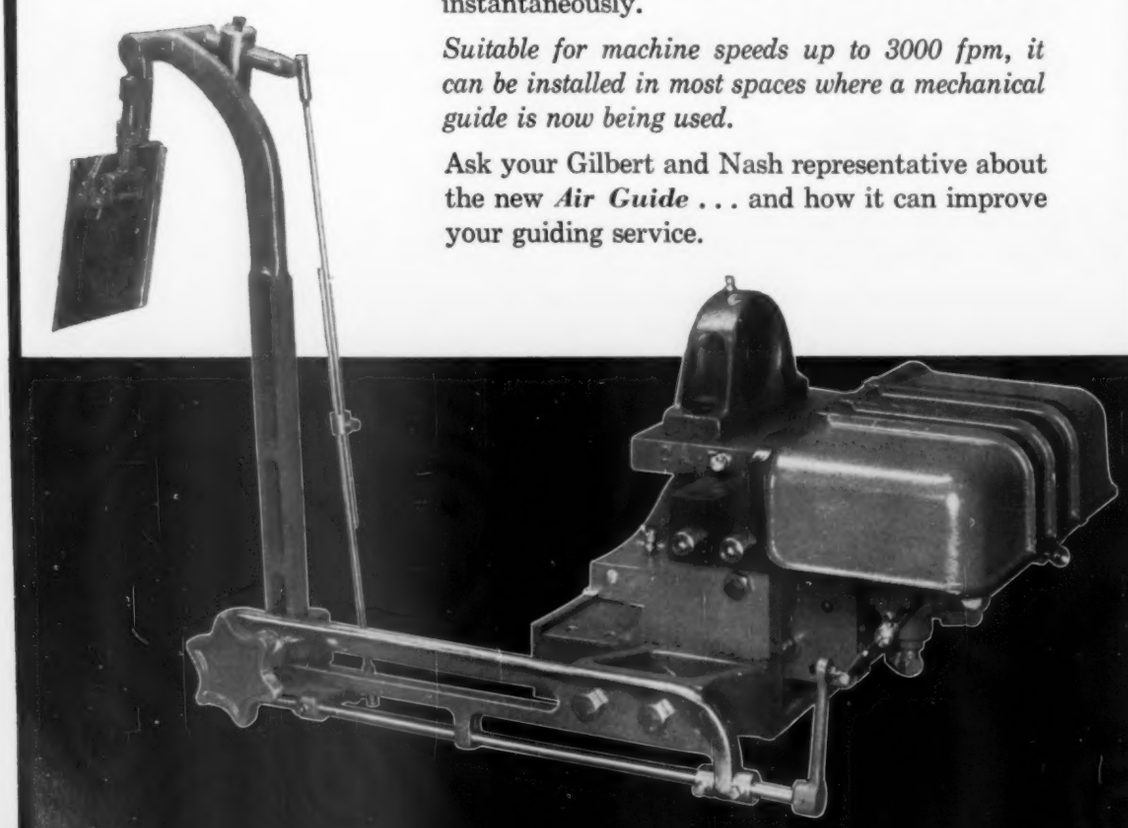
NEW AIR GUIDE FROM GILBERT AND NASH

Here's a new guiding service from Gilbert and Nash . . . an efficient, economical completely air-operated guide! Simple, too—a minimum of mechanical moving parts.

The new Gilbert and Nash ***Air Guide*** has a constant rate of correction, regardless of the machine speed. And when correction is needed, there's no lag! The ***Air Guide*** reacts instantaneously.

Suitable for machine speeds up to 3000 fpm, it can be installed in most spaces where a mechanical guide is now being used.

Ask your Gilbert and Nash representative about the new ***Air Guide*** . . . and how it can improve your guiding service.



GILBERT and NASH company

MANUFACTURED EXCLUSIVELY BY APPLETON MACHINE COMPANY, APPLETON, WISCONSIN

The paper mills want more!

Every paper mill that's tried this new pulp has requested additional tonnage!

HERE'S WHY: Alberta Hi-Brite bleached kraft pulp provides the superior qualities a paper needs in today's highly competitive market—*brightness, strength, cleanliness, opacity, forming properties, high viscosity!* And, you're assured a steady, on-the-continent supply of Alberta Hi-Brite! It's made in a new Canadian pulp mill that uses the most modern techniques and equipment . . . and draws from 2,000,000 acres of spruce and lodgepole timberland granted by the province of Alberta.

Order *your* cars from your St. Regis pulp representative or write: Dept. PP-1157, Kraft Division, St. Regis Paper Company, 150 East 42nd Street, New York 17, N. Y.

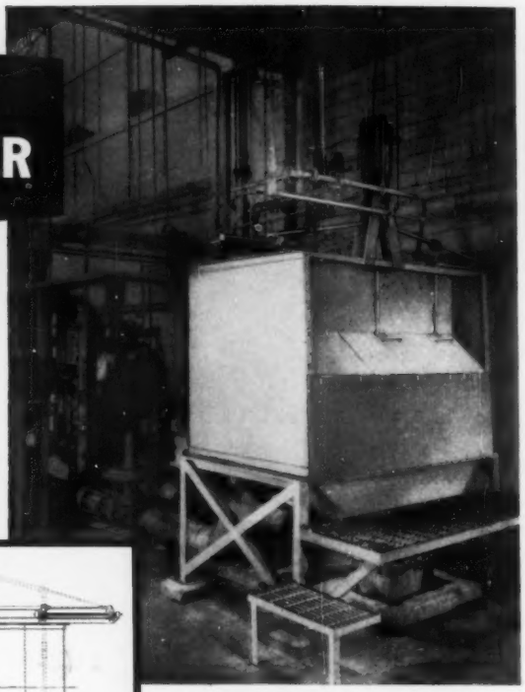
St.Regis PAPER COMPANY

150 EAST 42ND STREET, NEW YORK 17, N. Y.

PULP PAPER PACKAGING PLASTICS

SPROUT-WALDRON COWAN

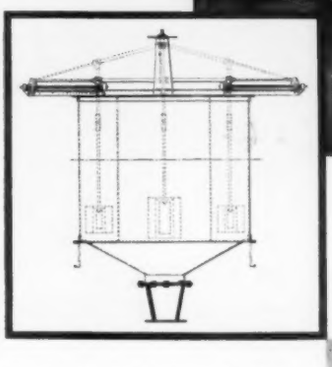
STOCK PROPORTIONER



One of 3 Stock Proportioners at Bowaters Southern Paper Corp., Calhoun, Tenn. The sketch at the left shows the orifices and the control mechanism.

NOW MADE BY SPROUT-WALDRON

- **Meters and proportions stock flows to the paper machine chest.**
- **Meters and proportions pulp and white water ahead of screens.**
- **Provides uniform, accurate volumetric metering of pulps.**

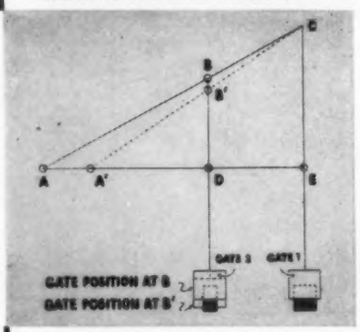


The Sprout-Waldron/Cowan Stock Proportioner is a controlled set of highly accurate, adjustable submerged orifices—the most consistently accurate type of stock flow control. The flow is directly proportional to orifice area over a wide range of flow. One orifice serves for each stock proportioned. Linking the orifice gates is a ratio setting mechanism notable for simplicity, accuracy, and trouble-free operation. There is no troublesome pneumatic, hydraulic, or electrical equipment.

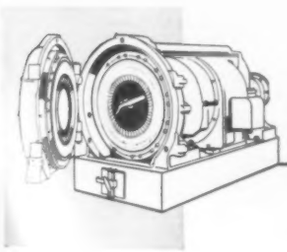
As many pulps as desired can be proportioned. For example, in a newsprint mill, broke and sulphite are proportioned to the groundwood flow. Total flow is regulated by a hydraulic cylinder controlled by the machine chest level. It's a simple matter to proportion even 5 or 6 different pulps.

Available in 2 basic models—the overflow type and the controlled level type. For full details, write to *Sprout, Waldron & Co., Inc., 32 Logan St., Muncy, Pa.*

HERE'S HOW IT WORKS!



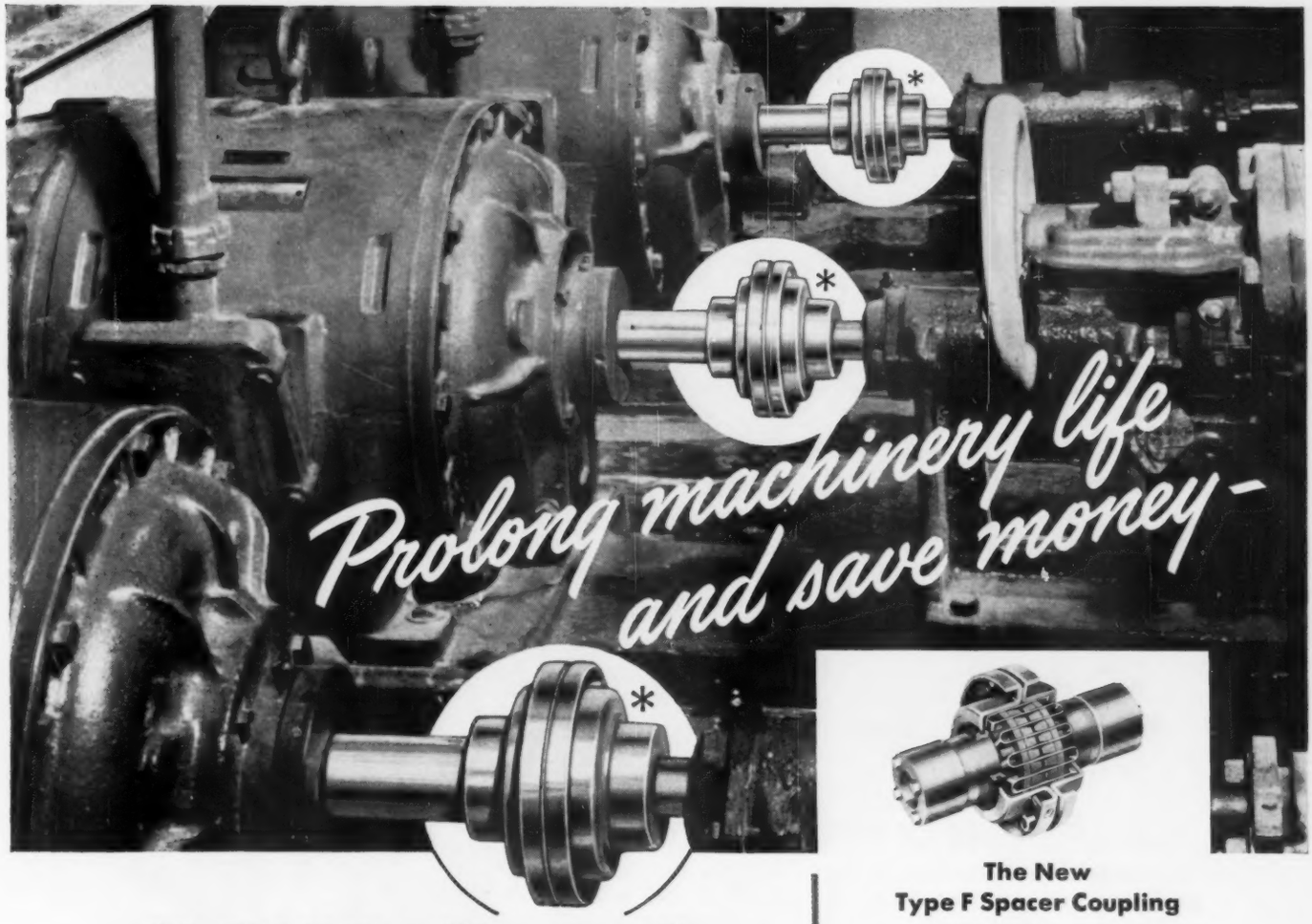
Consider two adjustable orifice gates designed to move vertically and which are operated by rod AC pivoted at A. The ratio of movement of Gate 2 to Gate 1 is a constant and is proportional to the distances AD and AE. A change in the position of Gate 1 moves Gate 2 proportionally. The ratio between the orifice areas is changed by moving pivot point A.



SW SPROUT-WALDRON

MODERN PULP PRODUCTION EQUIPMENT

PP/510



with FALK Steelflex Couplings

Ever since the first Falk Steelflex Coupling was designed and built, we have firmly held to these beliefs:

1. A coupling, to give fullest value, must do more than merely *connect* driving and driven machinery—it must *protect* the machinery and prolong its life.

2. A coupling, to be truly flexible, must overcome the effects of shock and vibration, as well as shaft misalignment.

Proof of the soundness of those beliefs is furnished by the record. More than one million Falk Steelflex Couplings have been used on every conceivable type of industrial application . . . giving trouble-free service, providing maximum protection to connected machinery.

* A single basic type—the famous Type F—fills 90% of all industrial application needs. It is versatile, efficient and economical. And—it is always available from factory, field or distributor stocks, in a wide range of sizes.

Write to Department 247 for engineering bulletin, including selection and dimension tables.

THE FALK CORPORATION, MILWAUKEE, WISCONSIN

MANUFACTURERS OF:

- Motoreducers
- Speed Reducers
- Flexible Couplings
- Shaft Mounted Drives
- High Speed Drives
- Special Gear Drives
- Single Helical Gears
- Herringbone Gears
- Marine Drives
- Steel Castings
- Weldments
- Contract Machining

FALK

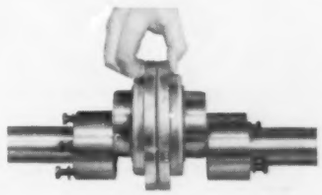
...a good name in industry

The New Type F Spacer Coupling

Here is a Steelflex coupling specially designed to permit fast, easy installation and removal in horizontal and vertical applications where it is impracticable to move the connected units—or where a space-gap (up to 12 in.) is necessary.

Like all Steelflex couplings, the Type F Spacer gives long, trouble-free service and maximum 3-way protection for connected machinery: it provides torsional resilience to reduce shock and vibration; it accommodates parallel or angular shaft misalignment; it allows free (or limited) end float.

An outstanding feature of the Steelflex Spacer is that it can be installed or removed in one piece (see photo below); no dismantling or servicing of the coupling is required. Pump assemblies can be disconnected and removed without disassembling the coupling, without exposing working parts.



The Steelflex Spacer coupling is prelubricated at the Factory and can be installed, or removed and reinstalled, without disturbing the lubricant—a highly desirable feature.

ORISKANY'S "3-way Service"

helps you get longer felt life!

Design Service

You can't put a truck tire on a bicycle and expect it to operate efficiently! At Oriskany, we start *right . . .* with the *right felt design.* Our technical engineers and our production staff analyze your requirements for finish and drainage and fibre strength, and then they design your felt with the proper characteristics for your particular machine operation. Result: More uniform paper products — better quality.

Laboratory testing Service

With our specially-designed testing equipment, we can determine from swatches of your felt whether your press rolls are causing uneven wear. Our chemists can tell you whether bacterial damage or chemical deterioration is reducing felt life, and we can recommend one of our exclusive chemical treatments to combat unusual conditions. Oriskany's laboratory analysis service can help you prolong felt life and reduce your operating costs.

Field engineering Service

If you want on-the-spot evaluation of your felt problem, we will arrange to have our competent Service Engineer visit your mill. He will make a thorough investigation and report his findings to our team of technical people. When they have all the facts, they are eminently successful in solving unique problems. Their combined experience is at your service.

First choice-because They last

Oriskany

WATERBURY FELTS

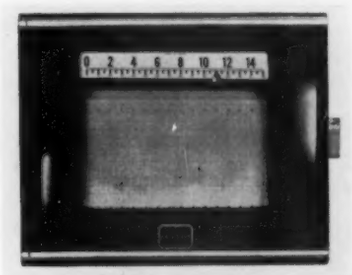
H. WATERBURY and SONS COMPANY • ORISKANY, NEW YORK

PULP & PAPER New Equipment and Supplies

Hard-Facing Alloy . . .
. . . Prolongs Life of Knife Inserts

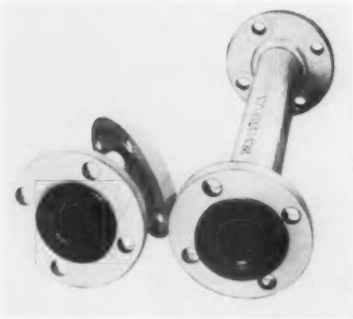
Applications: Chippers (photo shows Hansel Chipper).
Advantages: Last "more than three times as long" as previous inserts, according to Jones and Co., Birmingham, Ala., manufacturers of Hansel machines for eastern U.S.
Specifications: A coating of Colmonoy No. 6 hard-facing rod is applied to a mild steel blank which is then machined. Grinding leaves a 3/32 in. hard-face coating on the cutting edge.
Supplier: **Wall Colmonoy Corp., 19345 John R St., Detroit 3, Mich., Twinbrook 3-3800.**

Strip-Chart Recorder . . .
. . . Automatically Plots Curve



Applications: Plotting temperature vs. pressure, location on web vs. thickness, etc.
Advantages: Automatically plots a continuous curve showing relationship of one measured variable to another. Follows the most rapidly changing variables.
Specifications: Electronic Dynamaster X-Y Recorder records on a 12 in. strip chart and is available in pen speeds of up to 0.4 sec. for full scale traverse. Standard accuracy is 0.25%.
Supplier: **The Bristol Co., Waterbury 20, Conn., PLaza 6-4451.**

Pipe and Fittings . . .
. . . Are Corrosion-Proof



Applications: Handling corrosive liquids and gases.
Advantages: Provides a complete corrosion-proof system of Fluoroflex-T-S pipe with matching fittings. Pipe liner of Fluoroflex-T1001 is chemically inert at temp. up to 500° F. except for molten alkali metals and fluorine at high temp. and pressure. Liner formed over full gasket face of flanges, becomes an integral one-piece gasket and liner.
Specifications: Jacket is schedule 40 seamless steel pipe with 150 lb. ASA flanges threaded and welded at each end. Available in 1, 1½, 2, 3 and 4 in. sizes. 6 in. size available soon. 45 and 90° elbows of standard 125 lb. ASA cast iron and 150 lb. ASA cast steel (short radius), housings in sizes from 1 in. to 4 in. Tees, crosses, reducers available soon.
Supplier: **Resistoflex Corp., Roseland, N.J., CAldwell 6-7700.**

An "Excellent" Movie Available on Saw Use

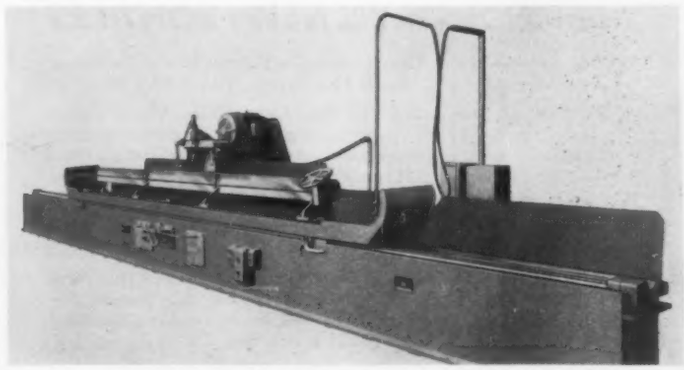
Homelite Corp., manufacturers of chain saws, has financed the production of a movie, "Chain Saw Safety Pays Off," in collaboration with the American Pulpwood Assn.

Scenes were in Maine and Georgia, mostly in pulpwood production areas.

Industry members of APA can buy prints for $150 and non-members for $175, ordering from Homelite, attn. J. H. Maxwell, Riverdale Ave., Port Chester, N.Y. This is substantially below cost to Homelite.

APA officials say it is an excellent and most interesting film. There is no advertising in the film.

Knife Grinder . . .
. . . Is Traveling Table Type



Applications: Concave or flat bevel edge, light or heavy grinding.
Advantages: Carriage travels in self-aligning ground ways (one V-way and one flat way). V-way absorbs forward thrust, permitting heavy cuts at high speed. Preloaded ball bearings in spindle shaft of grinding head eliminate end thrust or side movement, assuring grinding accuracy. Ball Bearing Wheel Dresser mounted on head allows operator to dress wheel quickly, 360° swiveling knife bar permits grinding to any bevel.
Specifications: Model 300 available in sizes from 78 in. to 300 in. capacity, weights from 13,500 lbs. to 42,500 lbs., depending on size. A 26 in. diameter segmental grinding wheel is belt driven by 25 HP TEFC BB or larger motor. Speeds variable up to 100 fpm. Faster speeds available to order. Standard size of knife bar is 8 in. x 8 in., larger sizes and magnetic knife bars available. Automatic infeed adjustable in increments of .00025 in. to .003 in. at each end of table stroke.
Supplier: **Samuel C Rogers & Co., Inc., 2070 Sheridan Drive, Buffalo 23, N.Y., VIctoria 8600-8601.**

MORRIS meets the CHALLENGE of INDUSTRY'S NEW FRONTIERS

No Matter What Your Present or Future Heavy Pumping Problems Are . . . Morris Can Satisfy You NOW!

The new Morris Type RX Slurry Pump is specifically engineered to handle the viscosities, densities and special characteristics of the slurries and sludges developing from industry's ever-advancing products. It is engineering attuned to the future . . . designed to meet the demands of a towering tomorrow.

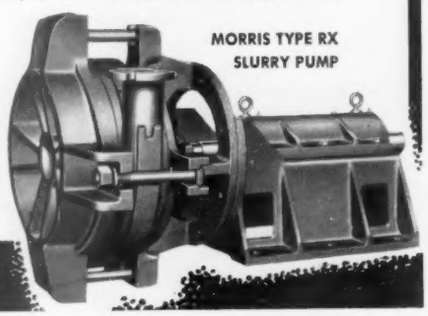
Rugged, Dependable, Trouble-Free; Operates With Minimum Attention . . . Cuts Maintenance Costs!

The new Morris RX is designed for performance perfection under all conditions, including heavy, coarse, fine slurries, dispersions and sludges. Operates at low speeds; quickly dismantled for inspection, avoiding lengthy lay-up time.

MORRIS MACHINE WORKS

Baldwinsville, N. Y. ***Sales Offices in Principal Cities***

FREE SERVICE: Morris engineers will gladly recommend the custom-made pump best suited to your needs. Send necessary data today.

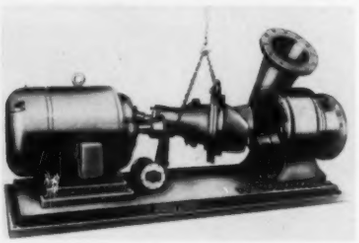


MORRIS TYPE RX SLURRY PUMP

MORRIS CENTRIFUGAL PUMPS

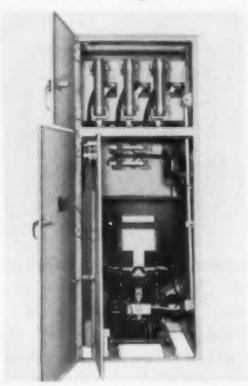
PULP & PAPER Equipment & Supplies

Process Pumps . . .
. . . Are Easy to Dismantle



Applications: For handling paper stock, white water, liquors, or for any heavy duty service for liquids with solids in suspension.
Advantages: Spacer coupling between driver and pump, and special back pull-out design, permit entire rotating element to be removed from casing without disturbing piping connections, by removal of spacer from spacer coupling and bolts from casing cover. Reassembly is equally simple. Self-venting discharge at highest point in casing eliminates air binding, insures steady flow.
Specifications: Available for capacities to 9,000 gpm and heads up to 160 ft. Pump parts available in bronze fitted, all iron, all bronze, AISI 316, all iron (SS trim) and all bronze (SS trim).
Supplier: **Goulds Pumps, Inc., 37 Black Brook Rd., Seneca Falls, N.Y., LOgan 8-5811.**

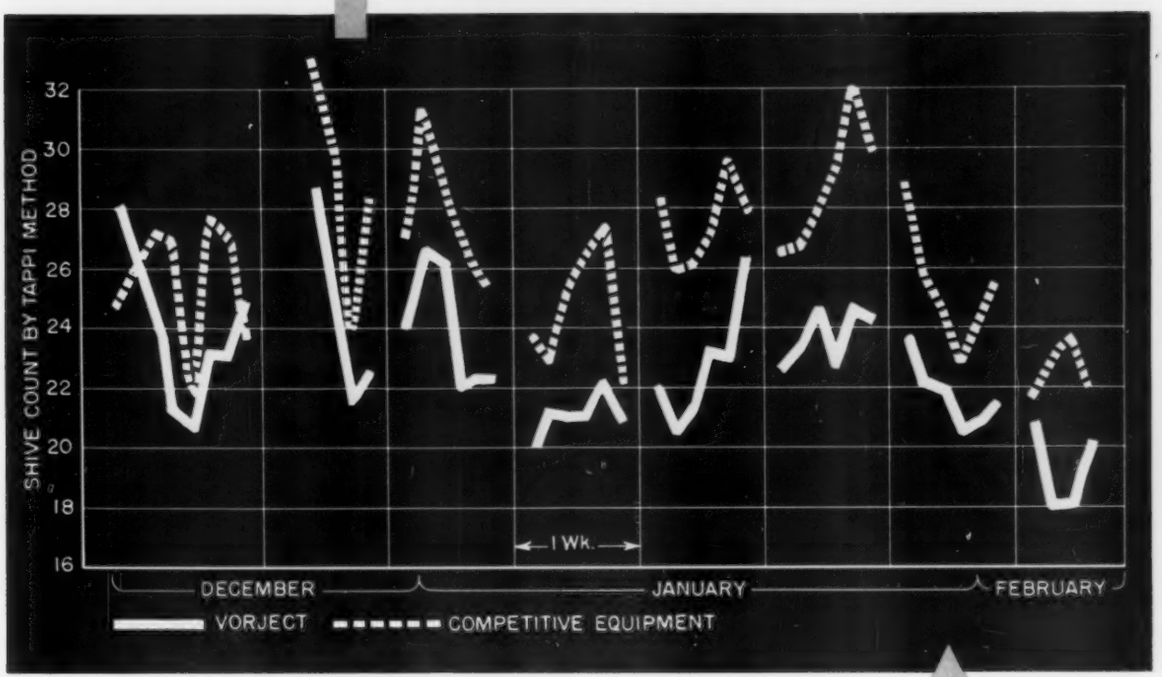
Motor Starter . . .
. . . Is Compact, Versatile



Applications: Full or reduced voltage starting, reversing or non-reversing, dynamic braking or multi-speed control of squirrel-cage, synchronous or wound rotor motors.
Advantages: Completely front accessible, basic unit measures only 34 in. wide by 32 in. deep. Safety features include mechanical interlocks that

Performance Speaks For Itself . . .

Compare VORJECT® shive removal with competitive equipment



The graph demonstrates the effectiveness of the NICHOLS FREEMAN 610 Vorject Cleaner when compared with competitive equipment, in actual mill operation, for a period of 45 working days. The Vorject consistently showed more efficient shive removal.

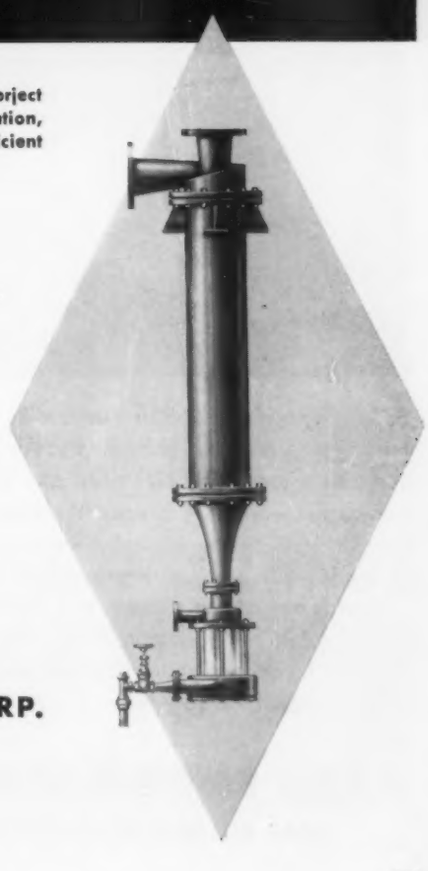
Get ALL the facts on the Vorject

STAINLESS STEEL CONSTRUCTION
No liners

MINIMUM MAINTENANCE
Unit at Continental Paper Co. ran 2 years on board mill stocks with no maintenance required. Firm bought 3 more units.

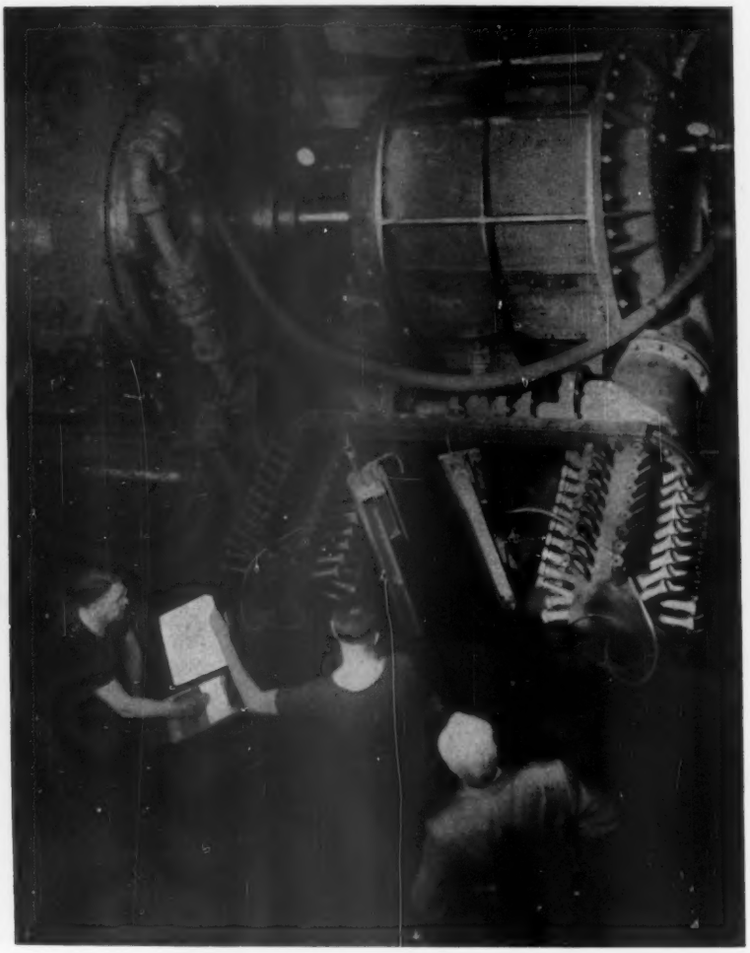
NO INSUCTION OF AIR
No eductors or water addition required. Machine installation test shows air in stock at fan pump 1.%—after Vorjects, 0.75%.

EFFICIENT SHIVE REMOVAL
See graph above.



NICHOLS ENGINEERING & RESEARCH CORP.
70 Pine St., New York 5, N. Y.
405 Montgomery St., San Francisco 4, Calif.
1477 Sherbrooke St. W., Montreal 25, Canada

Rated performance of every Nash Vacuum Pump is assured by this precise laboratory test



Rated capacities of Nash Vacuum Pumps are not theoretical. Every Nash Pump is tested individually. Air capacity is determined by delivery thru accurately machined and calibrated orifices. Related vacuum is measured by precise mercury column, and horse power is recorded electro-dynamically. Records of these tests are retained by us, and certified copies are available to Nash Pump owners.

That is one of the reasons why Nash Vacuum Pumps are installed in over a thousand leading Paper Mills. An engineer from Nash will be glad to survey your mill, and make recommendations, entirely without obligation to you.

NASH ENGINEERING COMPANY

409 WILSON ROAD, SO. NORWALK, CONN.

prevent access to high voltage compartments and fuse compartment door while starter is energized.

Specifications: 2300 to 4160-volt starters (Type H) available with either air break or oil immersed contractors up to 1,500 hp at 2,300 volts or 3,000 hp at 4,6000 volts. Short circuit protection of 150,000 kva at 2,300 volts and 250,000 kva at 4,160 or 4,600 volts provided by current limiting fuses.

Supplier: **Allis-Chalmers Manufacturing Co., Milwaukee 1, Wis., SPring 4-3600.**

New Saran Lining . . .

. . . Protects Pipes, Valves,

Applications: Handling corrosive liquids and gases.

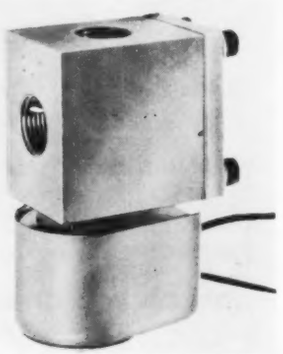
Advantages: New lining has 50% reduction in coefficient of thermal expansion, so expands and contracts to approximately same degree as steel casing. Thus it can be used in wider range of temperatures.

Specifications: Manufactured by The Dow Chemical Co., standard stock sizes of pipe, valves, pumps and fittings with new lining are available from inventory at no increase in price.

Supplier: **Saran Lined Pipe Co., Ferndale, Mich., LIncoln 4-8303.**

Solenoid Valve . . .

. . . Handles High Pressures



Applications: Hydraulic applications, for continuous or intermittent service.

Advantages: May be mounted in any position without affecting operation.

Specifications: Two-way valves are designed for tight shut-off on pressures to 1500 PSI. Available in ⅜ in. or ¾ in. pipe connections and with general purpose, watertight or explosion-proof solenoid enclosures.

Supplier: **Bulletin 8223, Automatic Switch Co., Florham Park, N.J., FRontier 7-4600.**

···IN GOOD COMPANY

The caliber of the companies and variety of products represented here is ample proof of Speedline's versatility—when it comes to process piping.

Learn how the unique features of Speedline Stainless Steel Fittings can benefit you—wherever corrosion or contamination is involved. The combination of Speedline Fittings and light wall Schedules 5 and 10 stainless pipe simplifies design and assembly—thus reducing installation time and material costs.

Write for your free copy of new Speedline Catalog today or contact your nearest Speedline Distributor.

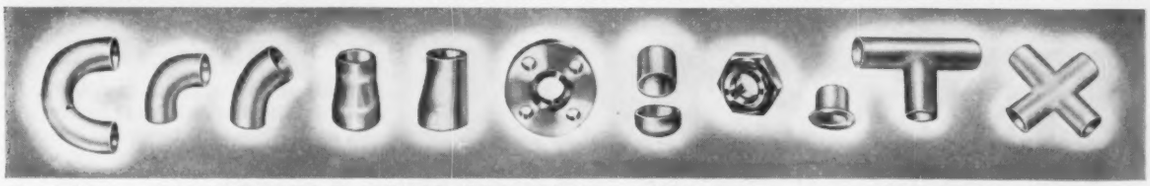
712

Speedline®

SPEEDLINE IS A REG. T. M. OF HORACE T. POTTS COMPANY

STAINLESS STEEL FITTINGS

SPEEDLINE DISTRIBUTORS ARE LOCATED IN PRINCIPAL CITIES FROM COAST TO COAST



Manufactured by **HORACE T. POTTS COMPANY** • 550 E. Erie Avenue • Philadelphia 34, Penna.

Chemicals Causing Floor Failures?

Here's An Invitation to Consider . . .

TRUSCON CHEMFAST CONCRETE

CHEMICAL RESISTANT FLOORING

When designing or replacing floors for CHEMICALLY CRITICAL AREAS!

- ✻ High Impact Resistance and Load Bearing Strength
- ✻ No Water in Mix Design
- ✻ Integral Resin Binder Protects Against Chemical Attack
- ✻ Positive Bond—No Mortar Joints
- ✻ Saves Repeated Shutdowns
- ✻ Saves Structural Floor Base
- ✻ Placed Like Regular Concrete (Not a Skim Coat)
- ✻ Optimum Thickness ½ inch

A request on your letterhead stating your floor corrosion problem will be followed by a personal inspection and specification by a qualified Truscon representative.

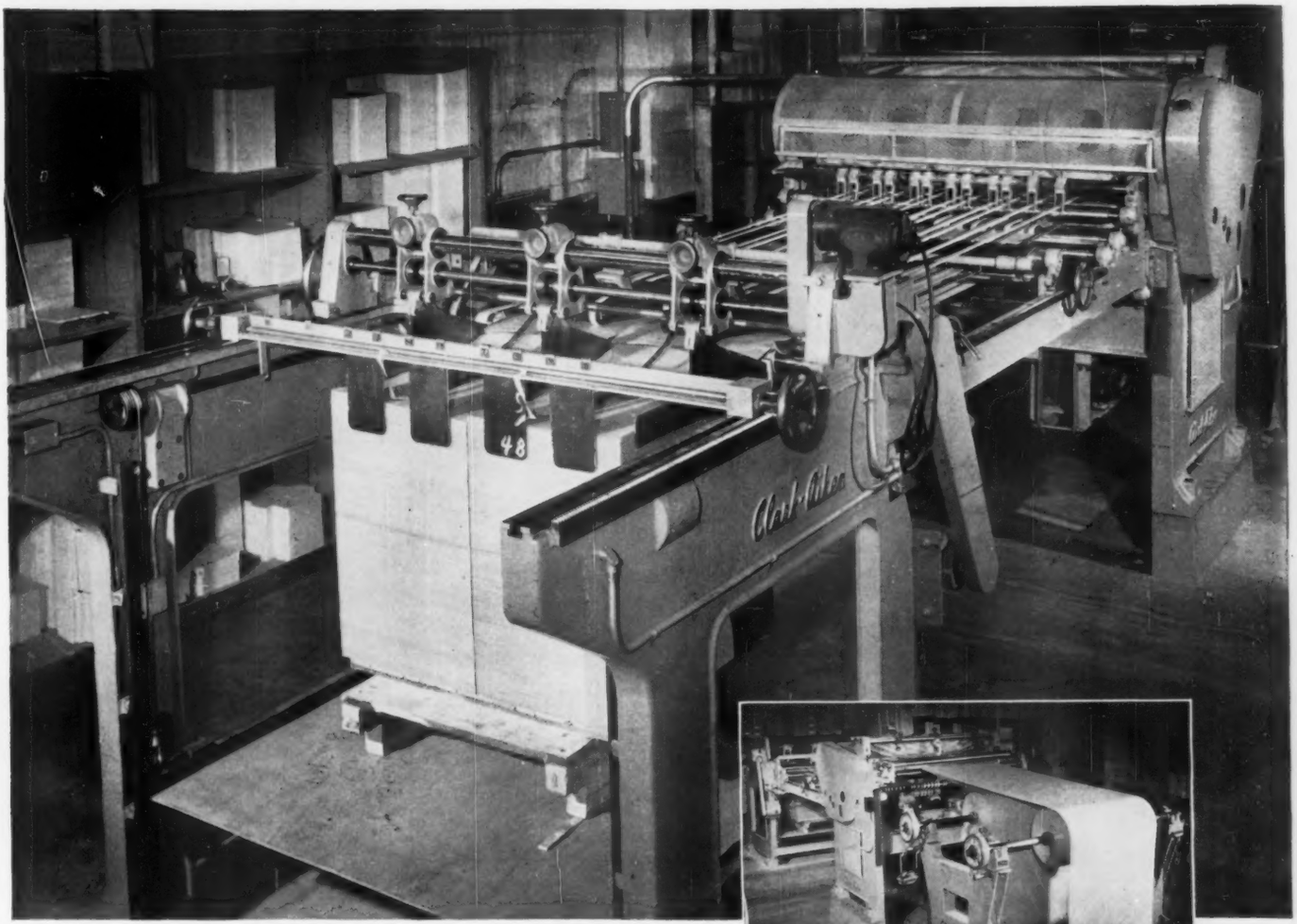
TRUSCON Laboratories
Industrial Maintenance Division of Devoe & Raynolds Co., Inc.
Detroit 11, Michigan

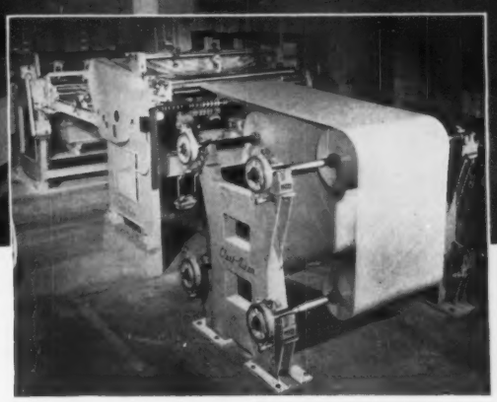
Arthur G. Schwarzenberg, New Manager, Customer Services, John W. Bolton & Sons, Inc. . . .
. . . will supervise sales in the Lawrence, Mass., office. He has been mgr. of The Emerson div., asst. sales mgr. and Bolton products sales mgr., since joining Bolton in 1936. Two sales auditing appointments under Mr. Schwarzenberg's supervision are John A. Pearson for Emerson products and Howard Dyke for the Bolton product group.

H. McIntosh Beatty, Jr. (left), Northwest Sales Rep for Hooker
. . . at Tacoma, Wash., will sell chemicals produced there and some made at Niagara Falls, N.Y., headquarters plant. Graduating from Yale in 1953, he joined Hooker in 1955 and has been working in technical sales service since early last year.

Hugh J. Rear (right), Sales Mgr. Industrial Pump Div., R. M. Wade
. . . of Portland, Ore., has been a national sales representative for Wade Rain Sprinkler Irrigation for the past four years. He will make his headquarters at Portland.

Nelson Thompson, Exec. V.P., Homelite Div. of Textron Inc. . . .
. . . was appointed to the newly created position after being vice pres., sales, since 1941. Mr. Thompson joined the Port Chester, N.Y., company in 1929 as a salesman.





After nine months experience sheeting its own stock, Dean C. Mathews, Executive Vice President of Quality Park Envelope Company, St. Paul, Minnesota, reports:

". . . in addition to substantial cost savings, it simplifies procurement and storage problems. We used to buy paper in many sheet sizes; we now buy a few roll widths and are able to order, receive, warehouse and move our paper more easily and efficiently."

"Before . . . we sometimes encountered difficult problems procuring special sheet sizes for special large orders, making it necessary to quote long delivery dates. Now, in most cases, we can take care of these orders from inventory. Trim losses may sometimes be greater than with special size sheets but such losses are more than offset by the saving in price differential and other advantages."

"For stock envelopes, we normally sheet to standard sizes but substantial runs of special sizes are sheeted especially for the job, necessitating frequent change-overs. To make up for this down time, we wanted the highest speed sheeter available. This we found to be the Clark-Aiken machine."

Quality Park sheets various grades of stock ranging from 20 to 52 pound substance at speeds of 500 to 800 feet per minute, drawing from one to four rolls at a time. An additional two-roll backstand is contemplated to permit sheeting of commercial envelope stock from six rolls at a time and the company plans to sheet heavier weights up to 150 pound tag in the near future.

If you produce envelopes . . . or any other product requiring paper, board, film or fabric in sheet form . . . make important cost savings and place yourself in a better competitive position by sheeting your own stock on a Clark-Aiken Cutter-Layboy Unit. Let us know the grades, sizes and approximate quantities you use and our engineers will study your requirements and offer you some interesting figures.

Quality Park Envelope Company simplifies stock procurement, storage, handling . . . . . speeds deliveries on "specials" . . . . . CUTS COSTS BY SHEETING OWN STOCK WITH A CLARK-AIKEN CUTTER-LAYBOY UNIT

THE Clark-Aiken COMPANY

957 SPRINGFIELD ROAD

LEE, MASSACHUSETTS

West Coast Office 114 East Union Street, Pasadena, Calif.

WARREN PUMPS, INC., Warren, Massachusetts

Gentlemen:

Please send me free Stock Pump bulletins No. 234, No. 235 and No. 243. I understand they will help me select the pump best suited for my requirements.

Name and Title _____

Company _____

Address _____

City _____ Zone _____ State _____

☐ PLEASE HAVE YOUR REPRESENTATIVE CALL.

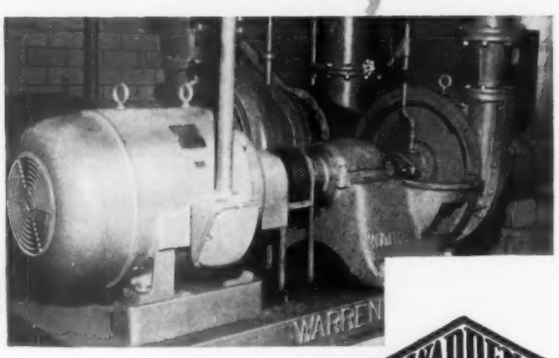
Bulletins Tell Why WARREN STOCK PUMPS Are Built to Fit Your Particular Needs

The important job of moving stock in a paper mill can be done most efficiently by pumps built for the specific job.

Hammermill Paper Company has relied on Warren engineering experience—and a variety of Warren Pumps—for nearly 20 years. One of their more recent problems involved moving hardwood stock from one operation to another in their new five-million-dollar Neutracel pulping and bleaching plant. After careful study and analysis the *right* pumps were furnished by *Warren*—and are now helping to produce fine quality pulp used in the manufacture of fine quality papers.

Warren Stock Pumps can be built to do *your* job. Write for detailed information—or use the above coupon.

SEND FOR YOUR FREE BULLETINS TODAY!



Typical of 75 Warren Pumps at the Hammermill Paper Co. are these two for hypo washer and hypo tower service.

PP-38

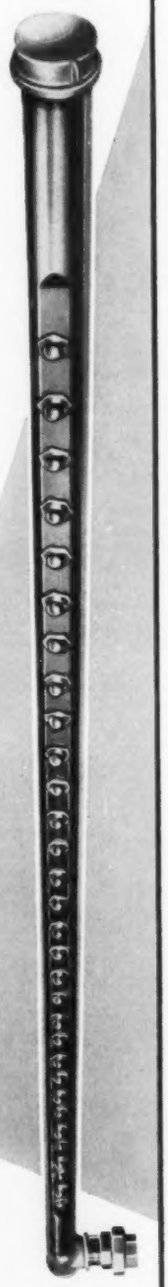
WARREN

WARREN PUMPS, INC.

WARREN, MASSACHUSETTS

LODDING

NON-CLOGGING SHOWER

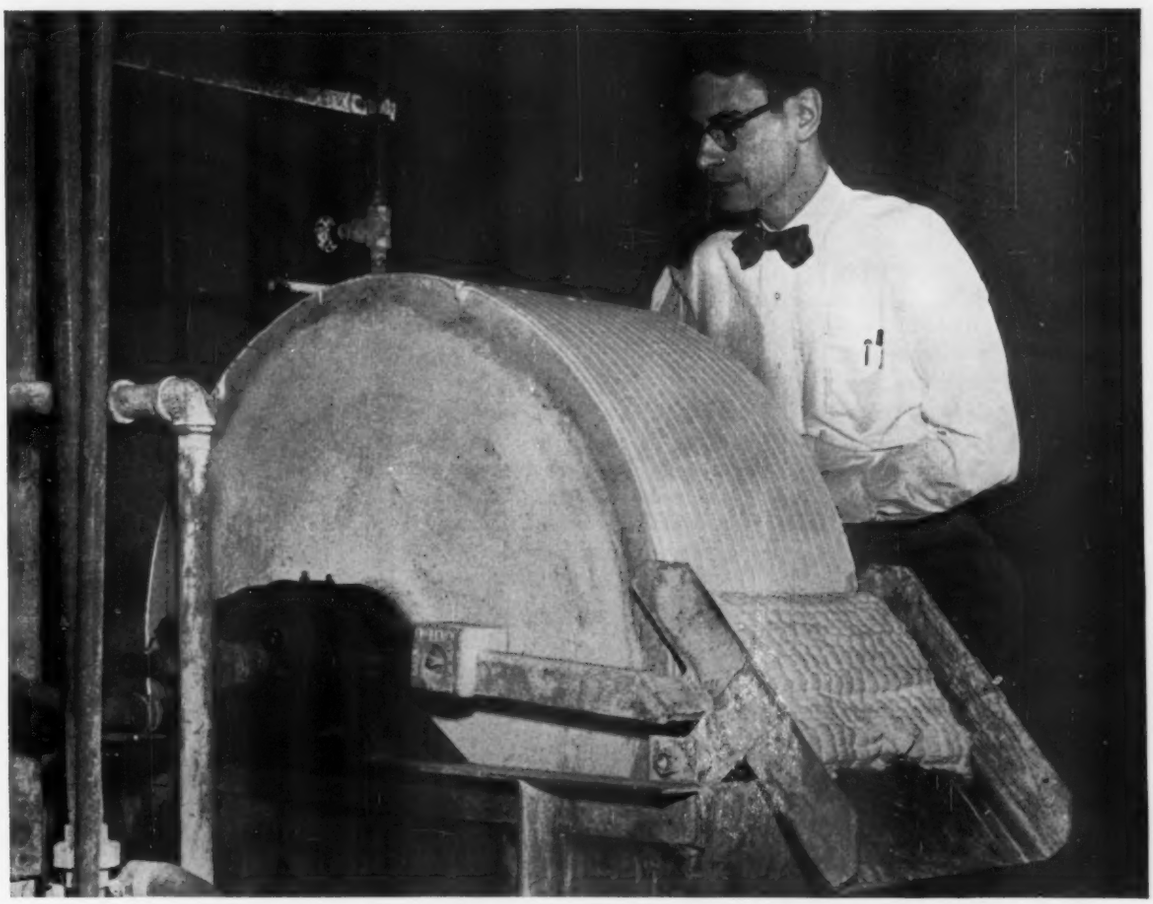


Here is a shower that you can use on white-water.
Ask your Lodding man for a demonstration.

LODDING ENGINEERING CORPORATION
WORCESTER • MASS.

Doesn't this look like

OPPORTUNITY IN RESEARCH?



Process variables in filtering are studied in search for improved pigments for Mead papers.

You'll find plenty of *big* opportunities for research at The Mead Corporation!

Research and development are important words at Mead. And we've just built a new million-dollar research and development laboratory to prove it! Here, Mead scientists, using the most modern facilities and techniques, are rapidly pushing back the frontiers of knowledge in this vital industry. They're taking the lead in discovering new facts, solving new problems, creating exciting new products for the future.

There are opportunities now in this advancing Mead research program for qualified chemists, physicists, chemical and mechanical engineers. The opportunities will be growing ones because: (1) The Mead Corporation is growing even faster than the fast-growing paper industry as a whole, and (2) Our research interests are among the broadest in the industry and are constantly expanding. Previous experience in the paper industry would be helpful, but not a requisite. If you are interested, write for an interview or send a complete resume to R. L. Warner, The Mead Corporation, Chillicothe, Ohio. If you would first like more information about Mead, write Mr. Warner for a copy of our booklet describing Mead's opportunities for technical men.

OPPORTUNITIES IN RESEARCH AT THE MEAD CORPORATION EXIST NOW FOR:

Bachelors,
Masters
and Ph. D's.

MEAD *papers*

a guarantee of performance:

You can't clog a liquid impeller!

There is no clogging problem, because there is nothing to clog. Pumping action is caused by a *liquid* impeller, a swirling vortex of fluid.

- No constrictive impeller eye
- No constrictive discharge ports
- No wearing rings

Material flows completely unobstructed, from suction to discharge flange.

Write for complete details on the Wemco torque-flow Solids Pump and its amazing principle of operation.

WEMCO

TORQUE-FLOW

SOLIDS PUMP

WESTERN MACHINERY COMPANY

650 FIFTH STREET, SAN FRANCISCO 7, CALIF.

PAPER MEN

Whether you are an *employer* looking for the right man or an *applicant* looking for a better position, it will pay you to investigate our specialized placement service covering all phases of the Paper, Container and Packaging Industries.

- PRODUCTION
- SALES
- MANAGEMENT

A substantial number of exceptional men are now listed with us and are available almost immediately. Whatever your requirements, contact us in complete confidence without involving any obligation.

FRED J. STEFFENS
Personnel Consultant to the Paper Industry

CADILLAC ASSOCIATES, INC.
Suite 614 Phone: WAbash 2-4800
220 So. State St. Chicago 4, Illinois

POWER AND RECOVERY SUPERINTENDENT

Competent to operate 9,000 KW Power Plant and 150 ton Recovery Plant. For new pulp mill in Cuba. Pleasant tropical home surroundings. Good American schools. Immediate salary increase commensurate with ability and experience. Please submit complete resume of training and experience. Your reply will be kept confidential. Address Box 309, c/o PULP & PAPER, 370 Lexington Ave., New York 17, N.Y.

PULP MILL SUPERINTENDENT FOR WEST COAST PULP MILL

Must be experienced operator with good record and ability to assume full responsibility of all phases of pulp mill operation. Technical background desirable but not essential.

Send complete resumé to Box 306.

PULP & PAPER
370 Lexington Ave., N.Y. 17, N.Y.

Confidential Employment Service

For employers seeking new personnel and mill executives seeking new positions. We invite your inquiries.

Charles P. Raymond Service, Inc.
294 Washington Street, Boston 8, Mass.
Telephone LIberty 2-6547

AGENTS

Wanted to sell new Tin base slime control material. Non-corrosive to wires. Paper mill personnel may act as agents in spare time. Confidential. Reply Box 310, Pulp & Paper, 370 Lexington Ave., New York 17, New York.

PROFESSIONALLY SERVING . . . the specialized needs of responsible entities within the industry, both corporate and individual

GEORGE M. SUNDAY & ASSOCIATES

PERSONNEL CONSULTANTS TO THE PAPER INDUSTRY

PROCUREMENT...of qualified personnel FOR mills, converters and distributors.

PLACEMENT...of qualified personnel WITH mills, converters and distributors.

CONSULTATION...with top management on matters involving the application of human effort.

6 EAST MONROE STREET • CHICAGO 3, ILLINOIS
ANdover 3-1970

Statement required by the Act of August 24, 1912, as amended by the Acts of March 3, 1933, and July 2, 1946 (Title 39, United States Code, Section 233) showing the ownership, management, and circulation of PULP & PAPER, published monthly except in July when publication is semi-monthly at Bristol, Connecticut for October 1, 1957.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Wm. B. Freeman, 500 Howard Street, San Francisco 5, California; Editor, Albert W. Wilson, 1791 Howard Street, Chicago 26, Illinois; Managing Editor, None; Business Manager, Ralph R. David, 370 Lexington Avenue, New York 17, New York.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and adresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given). Miller Freeman Publications Incorporated, 500 Howard Street, San Francisco 5, California; Wm. B. Freeman, Miller Freeman Jr., L. K. Smith, 500 Howard Street, San Francisco 5, California; W. E. Crosby, 71 Columbia Street, Seattle 4, Washington.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears on the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

Wm. B. Freeman,
President (Publisher)

Sworn to and subscribed before me this 1st day of October, 1957.

[Seal] Barbara M. Hampson,
Notary of the Public
San Francisco, California

My Commission expires February 18, 1958.

WANTED

Company Owned Homes

Group interested in purchasing whole communities of homes; assume responsibilities of renting and maintenance. Write, stating size, location, price, etc., to Box 311, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

ENGINEER—PLANT

Paper mill experience. Mill located in Chicago area. Pension, group insurance and employee benefit plans. Advise age, experience and salary expected. Reply to National Biscuit Company, Advertising Department, 425 Park Avenue, New York 22, New York.

Greater Production of Higher Quality Pulp

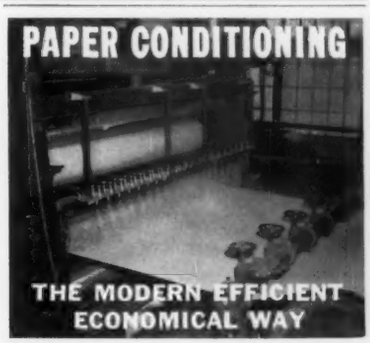
- *in Less Time*
- *at Lower Cost*

This is the end result of the various processes and equipment which we have installed in pulp mills throughout North America. Send us details of your requirements.

Chemipulp Process Inc.
Watertown, N. Y.

Associated with
Chemipulp Process Ltd., 253 Ontario St., Kingston, Ont.

Pacific Coast Representative
A. H. Lundberg, Inc., P. O. Box 202, Mercer Island, Wash.



VAPO SYSTEMS method of conditioning paper is the only time-proven method of properly and uniformly adding the desired moisture content to your sheet.

VAPO SYSTEMS units are proven for spraying surface materials as starch, casein, wax, clay, etc. Mills report that VAPO SYSTEMS have paid for themselves in less than a year.

Photo shows one of several installations in a large mill.

Write for factual data

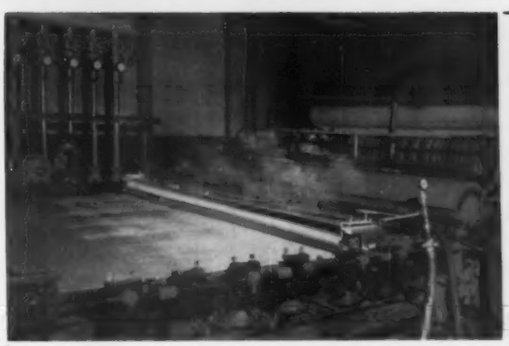
VAPO SYSTEMS COMPANY
129-34 Home Avenue
VILLA PARK, ILLINOIS

STOP TELESCOPING ROLLS MUSHROOMING CORES

Use Air Operated HORTON Clutches and Brakes to control the sheet tension on your winders and back stands. Take the guess work out of tensioning and let HORTON equipment give you uniform tight rolls all the time.

VARIABLE SPEED CLUTCH PULLEYS
GOVERNOR CONTROLLED BRAKES

HORTON MFG. CO., INC.
MINNEAPOLIS 14, MINNESOTA



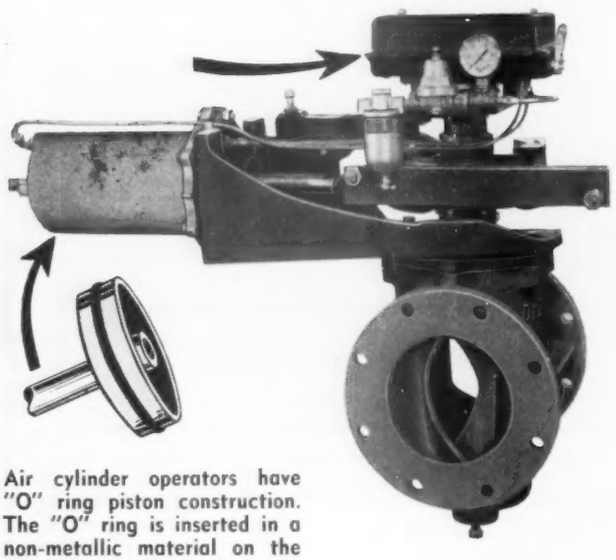
Increase Paper Production with DUPASQUIER DRIPLESS STEAM SHOWER BOX

- Preheats the Web
  U. S. patent 264 2314
- Changes Water Viscosity
  THUS FREEING WET MAT
- Allowing Speed Increase

Custom Built for Any Machine
Write for Illustrated Folder
Canada Pat. 1955
Other pat. pdg.

J. H. DUPASQUIER
560 E. Clarendon St.
Gladstone, Oregon

Flow characteristics are quickly and easily altered by changing the cam in the positioner. Any desired flow pattern can be obtained with an appropriate cam design. The 4-way pilot is built-in, eliminating external tubing and gages.



Air cylinder operators have "O" ring piston construction. The "O" ring is inserted in a non-metallic material on the periphery of the piston, assuring maximum seal and longevity.

WHEN CONTROL IS ESSENTIAL...

DeZurik Automatic Control Valves deliver precise metering control on stock, white water and all other process lines.

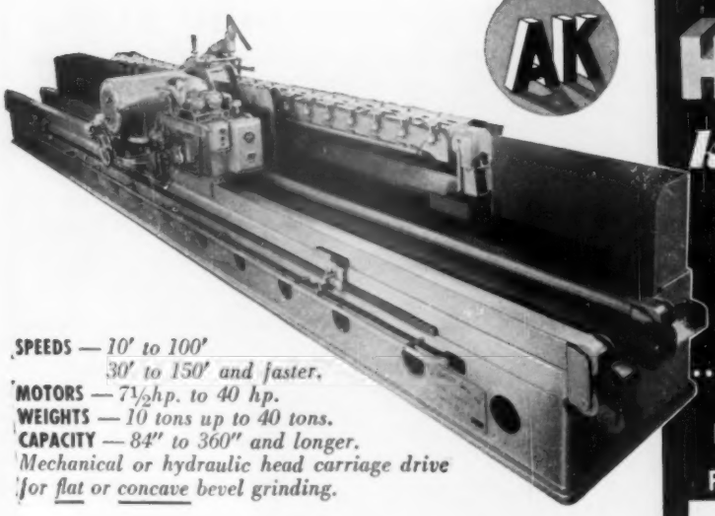
The orifice of the valve maintains the same diamond shape at all times. Stock cannot hang up and pack, distorting the flow pattern and destroying precise control.

Their extreme sensitivity, their instant response, self-cleaning design and freedom from backlash add up to the most rigid, most accurate control possible.

For detailed information, write

DeZURIK CORPORATION
SARTELL, MINNESOTA

MODEL AK



SPEEDS — *10′ to 100′*
30′ to 150′ and faster.
MOTORS — *7½hp. to 40 hp.*
WEIGHTS — *10 tons up to 40 tons.*
CAPACITY — *84″ to 360″ and longer.*
Mechanical or hydraulic head carriage drive for flat or concave bevel grinding.

Other Models. GK — **medium heavy duty** — *capacity 32″ to 184″*
DN — **normal production** — *capacity 32″ to 108″*

HANCHETT MANUFACTURING COMPANY
World's Largest Manufacturer of Knife Grinding and Saw Sharpening Machinery
MAIN OFFICE — Big Rapids, Michigan WEST COAST — Portland, Oregon

FOR ACCURACY — FINEST FINISHES

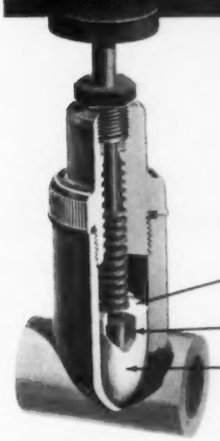
HANCHETT
knife grinders

for the
PULP AND PAPER INDUSTRIES

FOR GRINDING — HOG — BARKER
PAPER TRIMMER AND DOCTOR BLADES

NEW MODEL SK-24
slitter knife grinder
FOR TOP — BOTTOM SLITTERS
CAPACITY 3″ TO 24″ DIAMETER
SEMI OR FULL AUTOMATIC
FINEST IN ACCURACY AND FINISH

NEW! ALL-PLASTIC GATE VALVE



VANTON
FLEX-PLUG* VALVE
½"- 2" sizes

- No-pressure-drop construction of gate valve
- Throttling flow-control feature of globe valve
- PVC or styrene-copolymer construction
- Handles wide range of corrosives and slurries

- **Back-seating feature of cap:** when valve completely open, relieves pressure on packing.
- **Free-to-swivel plug:** provides even wear of cap, perfect closure.
- **Flexible synthetic cap:** easily replaced without removal of valve from line; minimal maintenance. Handles abrasive slurries without wear.

- **All-plastic design** — PVC or styrene-copolymer. Replaceable caps available in Neoprene, Buna-N, and Hypalon (Kel-F elastomer on special order).
- **Suitable for vacuum**—resilient cap makes excellent seal.
- **Adaptable** to all existing plastic pipe and fittings; especially suited to Vanton P, S, and N lines of plastic pipe and fittings.
- **Rated for 150-lb. service**—PVC line up to 140°F., styrene-copolymer line to 170°F.

*Pat. Pending

Catalog FP-1 gives full details. Write for it today!

VANTON PUMP and Equipment Corp. • Hillside, N. J.
DIVISION OF COOPER ALLOY CORP.

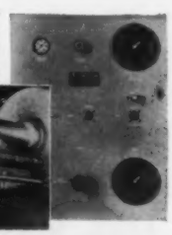
TENSION CONTROL

OUNCES TO INFINITY

Maintain uniform tension . . . reproduce desired tension at will with the new Pneumatic Applications Co. tension control system. Performs with outstanding uniformity on all pneumatic winding and unwinding operations.

Load sensing journal varies pressure to clutch or brake, making tension adjustments instantly . . . automatically to provide exact tension throughout operation. Throttling type controller has proportional band of .067% . . . responds to load changes of a fraction of a pound at any control point.

Compact control panel can be mounted at any convenient location. Operation is so simple little training and no skill is required to operate entire tension control system.



Load sensing journal measures tension at the web of material for greatest accuracy. Sensitive circuit and unique multi-valued variable reset response rate absolutely eliminate unstable control (hunting).

THE PNEUMATIC APPLICATIONS COMPANY
College Highway, Simsbury, Connecticut

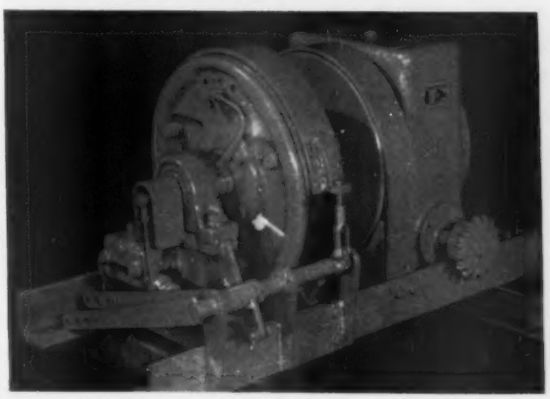
SAVE TIME · LABOR · MONEY

PRENTICE
Hydro-Loader

Loads and Unloads Pulp Trucks in Minutes!

Drive up to landing, load your truck in minutes—quickly—economically—safely. HYDRO-LOADER permits approximately 8 feet of loading space . . . has a swing radius of 12-14 feet. In transit the weight of the boom and bucket can be transferred to the front axle. The HYDRO-LOADER simplifies unloading in gondolas . . . will safely unload your truck quickly, with a minimum of effort. Each HYDRO-LOADER is a completely self-contained unit . . . rugged, powerful, designed to give mills the utmost in dependable service with a minimum of upkeep and repair. The complete unit is readily installed to any standard truck frame and can be removed without excessive expense or loss of time.

Free Spooling Power Winch



The unit can be furnished as an all-hydraulic unit with lifting capacity of approximately 3000 pounds, or the hydraulic hoisting units can be replaced with the free spooling power winch, illustrated above. This new power winch will increase lifting capacity above 3000 pounds. Write today for complete details and quotation.

Heikkinen MACHINE CO.
PRENTICE, WISCONSIN
Hydraulic and Mechanical Hoists for Truck or Tractor

For Consistent
Professional
Performance...

You can't beat HAMILTON Felts

To stay on the first team, a football player must consistently out-perform others competing for his position.

It's the same with felts.

Since 1858, Hamilton Felts have been on many paper makers' "first team" because Hamilton Felts have *consistently* out-performed other felts:

We can supply a Hamilton Felt of standard construction for more than 300 proven styles—or design a variation to solve *your* specific problem. Whatever you manufacture, from heaviest board to thinnest tissue, talk over your problems with your Hamilton Felt Service Salesman.

HAM FELTZ says:

"Pro-football players don't think it's "sissy" to guard against injuries — neither should you."
Contributed by P. T. Pittsburgh

YOU CAN'T BEAT
Hamilton
FELTS

Have you a pet safety slogan? Send it to Ham Feltz and let us publish it. Keep the mail "rollin' in!"

SHULER & BENNINGHOFEN
HAMILTON, OHIO

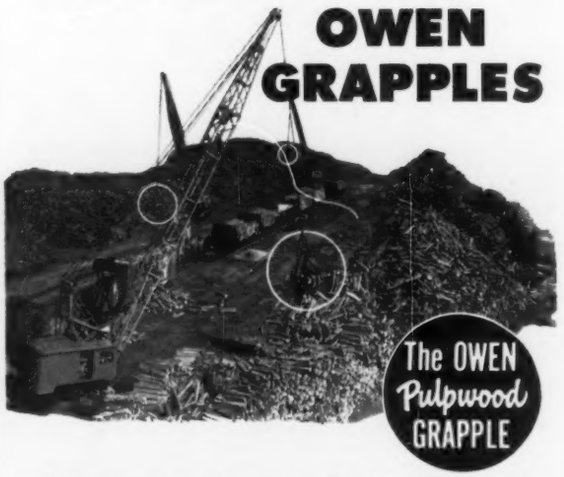
FIRST CHOICE FOR DEPENDABILITY
AT DRYDEN PAPER CO.

NORTH
WATER FILTERS

Designed And Manufactured Exclusively For The Paper Industry by . . .

GREEN BAY FOUNDRY & MACHINE WORKS
Green Bay • Wisconsin

one-two-then three...
OWEN GRAPPLES



Exceptional performance of Owen Pulpwood Grapples sells unit after unit as in this case.
To try one is to instantly recognize superior handling efficiency based on an original and exclusive principle of operation.
Investigate!

THE OWEN BUCKET CO.
6012 BREAKWATER AVE. • CLEVELAND, OHIO
New York City • Philadelphia • Chicago
Berkeley, Calif • Southern Corporation, Charleston, S. C.

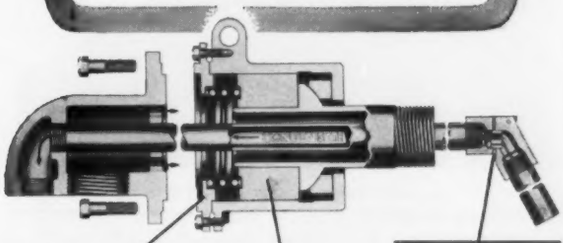
FOR
"FLIP-TOP" Action!

HOKE
TOGGLE
VALVES

A flip of the handle is all it takes to open or close a Hoke toggle valve, providing fast, positive control on gas or liquid lines at pressures up to 1000 psi. Seats and stem seals are tight enough for most vacuum work. For instrument panels or test stands, in angle and globe patterns of brass or stainless. Sizes ⅛" through ½", handles are colored for quick identity. Complete data is yours for the asking.

HOKE
HOKE INCORPORATED
Fluid Control Specialists
241 S. DEAN STREET, ENGLEWOOD, N. J.

Johnson Joint
SELF-SUPPORTED TYPE
with SYPHON ELBOW



ASSEMBLY PLATE — Holds internal parts in position when head is removed.

SELF-SUPPORTING — Needs no external supports of any kind.

SYPHON ELBOW — Permits use of straight pipe for syphon. Can be inserted or withdrawn right through the joint.

WRITE FOR INFORMATION

Bulletin S-2001 has all the facts on this joint-and-elbow combination that supports itself, has no packing, needs no lubrication, outmodes unwieldy syphon pipes. Johnson Joints are also available in pipe-supported and rod-supported types, to suit all operating needs.

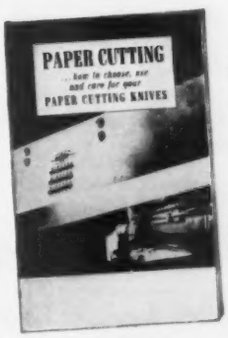
The Johnson Corporation
849 Wood St., Three Rivers, Mich.

'Chips' DISSTON says:

"If you're looking for clean-cut chips —look to DISSTON!"

Each Disston Chip-Master Chipper Knife is made of high-alloy steel. Each is specially heat treated and tempered to hold its edge under severe operating conditions. Each is hard and tough at the business edge, softer at the slots to absorb shocks. And each knife face is ground super-smooth to give extra-clean, money-saving chipping.

See your Disston distributor today . . . and see for yourself why Disston Chip-Masters are first choice with those who demand low-cost knife operation.



SAVE ON KNIFE RESHARPENINGS AND REPLACEMENTS

with Disston 866 Paper Knives. Edges stay sharp, won't roll under or chip out. For free booklet, write to *Henry Disston Division, H. K. Porter Company, Inc., Philadelphia 35, Pa.*

H. K. PORTER COMPANY, INC.
Henry DISSTON DIVISION

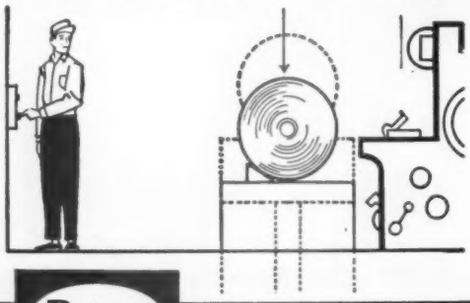
This pickling and passivating operation in our Seattle Shop removes all scale and impurities from welded stainless steel parts and accelerates formation of a corrosion resistant surface.

STAINLESS STEEL PIPE & FITTINGS
. . . for the Pulp and Paper Industry

ALASKAN COPPER Works
SEATTLE WASHINGTON

3600 E. MARGINAL WAY • SEATTLE • EL. 5800 • TWX SE-392

Lift and lower paper rolls the safe, low-cost way



Rotary®

PAPER ROLL LIFT

The down-time and expense involved in straightening shafts damaged in handling by dangerous overhead gear will pay the cost of a Rotary Paper Roll Lift. This efficient hydraulic lift with automatic holding chocks insures steady, safe handling always. Other Rotary Lifts can save money, speed operations at loading docks and elsewhere throughout your plant. Capacities to 100,000 lbs. Write for Catalog RE-203.

ROTARY LIFT COMPANY
Division of Dover Corporation
1008 KANSAS, MEMPHIS 2, TENN. — CHATHAM, ONTARIO

FITCHBURG "RESISTO"
Stainless Steel Screen Plates

Simple Construction:
Heavy one-piece steel plate.
One-piece Bronze "shock-absorber" grid frame.
Joined with forged-in Inconel rivets. (no welding)

Highest Capacity: Cut with our famous "DUPLEX SLOTS," giving top screening capacity.

Instantly Interchangeable: With any standard 3/8" Bronze plates either Drilled or Beveled edge.
Also available 5/8" thick for "T"-Bar installation.

FITCHBURG
Screen Plate Co., Inc.
301 South St., Fitchburg, Mass.

Back view showing simple, rugged, two-piece construction.

CLAYS

AMERICAN — **ENGLISH**

UNIFORM • SUPERIOR • DEPENDABLE

English China Clays Sales Corporation
551 Fifth Avenue, New York 17, N.Y.

COMPLETE ENGINEERING AND CONSTRUCTION SERVICES FOR THE PULP AND PAPER INDUSTRY

- Design and Construction of Pulp and Paper Mills
- Steam and Hydro-Electric Power Plants
- Power Studies
- Reports and Appraisals
- Recovery Plants, Extensions and Alterations

Send for our booklet,
"Engineering, Design,
Construction for Industry"
Address Dept. **R,**
Ebasco Services Incorporated
Two Rector Street,
New York 6, N. Y.

ENGINEERS · CONSTRUCTORS EBASCO BUSINESS CONSULTANTS

NEW YORK · CHICAGO · DALLAS · PORTLAND, ORE.
SAN FRANCISCO · WASHINGTON, D. C.

Centrifugally cast **STAINLESS STEEL**

SLEEVES
LINERS
WEARING RINGS
CORED BAR STOCK

As cast or semi-machined

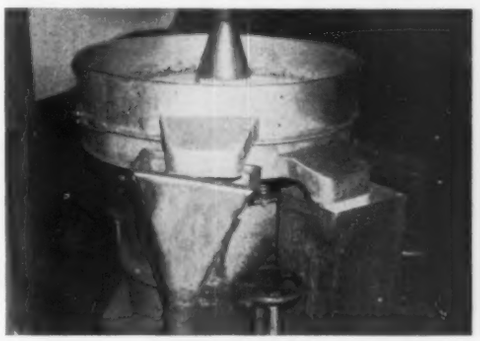
Annealed for maximum machinability, corrosion and heat resistance

- ★ Save time—cut metal waste—order dependable Vollrath stainless steel sleeves in standard cored bar stock sizes —as cast, or semi-machined to 1/16" of size ordered.
- ★ Centrifugal casting assures fine grain structure free from porosity, no hard spots, greater uniformity and superior wear resistance—it assures trouble-free machining.
- ★ Sleeve sizes from 3" to 10¼" O. D. Maximum wall thickness 1½". Available sizes, properties, and nominal strengths on request. Write for descriptive folder.
- ★ Also available: stainless steel sand casting and complete stainless steel fabricating and finishing. Fast Delivery!

FOUNDRY DIVISION
THE VOLLRATH COMPANY
DEPT. P-11 SHEBOYGAN, WISCONSIN

48" SWECO Separators Screen 1,800 Lb. of Slurry in 25 Minutes for Mead Paper

SWECO Vibrating Screen Separators are screening starch slurry at a unit rate of 1,800 lb. (485 gallons) every 25 minutes for the Mead Corporation of Chillicothe, Ohio and Kingsport, Tenn. The 48" diameter units have stepped up Mead's production of high-quality white paper by processing six to eight batches of slurry apiece in an eight-hour shift.



This 48" diameter SWECO *Separator screens up to eight batches of starch slurry a day to speed production of Mead Corporation's quality white paper.*

The SWECO Separators are equipped with 150-mesh (.0041" opening) stainless steel wire cloth. They have replaced processing screens of 60 mesh or less that slowed down effective removal of dirt from the starch.

Mead Corporation mill operators find the SWECO Separators easy to maintain and simple to clean. SWECO's unique design permits effective cleaning by flushing with steam and hot water.

A second 48" SWECO Separator was installed as part of an expansion program at the Chillicothe mill.

Screening Analysis and Recommendations Available

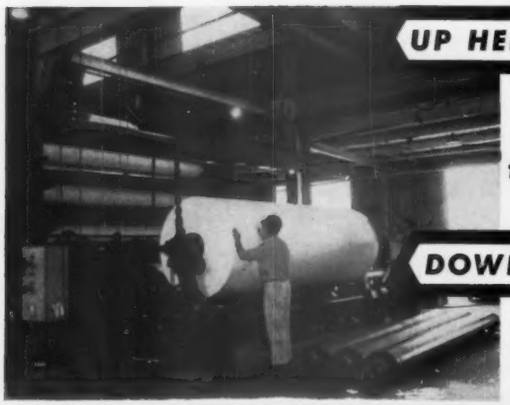
Your nearby SWECO District Engineer is available to help you with special screening problems. His "know-how" covers over 200 different materials . . . wet and dry, coarse and fine, heavy and light. He has an 18" SWECO Separator available, to demonstrate in your plant how this equipment can screen your material. No obligation, of course.

A complete data file on screening pulp and paper products plus a 22-page catalog are yours for the asking. Write for Bulletin S-111-19.

SWECO SEPARATORS

SOUTHWESTERN ENGINEERING COMPANY
4800 Santa Fe Ave., Los Angeles 58
LUdlow 3-6262— Cable: SWECOLA

Engineers and Constructors . . . Manufacturers



UP HERE, there's **A EUCLID CRANE**

Placing Cores on the Paper Winder

DOWN HERE

This essential paper mill operation is made easier and accomplished quicker with the aid of a precision control Euclid Crane.

Directly behind the large sheet roll of paper are three more cores ready for placement on the winder.

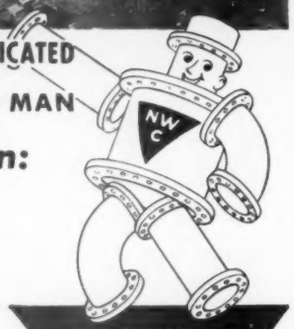
Paper mill cranes are a specialty of ours. We can build them to meet your general or specific handling needs. For stand-by or continuous service. Any capacity, any control system.

That's why an ever increasing number of paper mills are specifying EUCLIDS.

for details write **THE EUCLID CRANE & HOIST CO.**
1363 CHARDON ROAD • CLEVELAND 17, OHIO

OUR NEW AND LARGER HOME DESIGNED TO SPEED YOUR JOB

IF YOU WANT IT FABRICATED
NWC's YOUR MAN



Specializing in:

- Stainless Steel Products
- Stainless Steel Tubing
- Stainless Steel Valves
- Stock Valves
- Stainless Steel Fabrication
- Stainless Steel Fittings
- Stainless Steel Pipe
- Copper Smithing
- Lead Linings
- Lead Burning

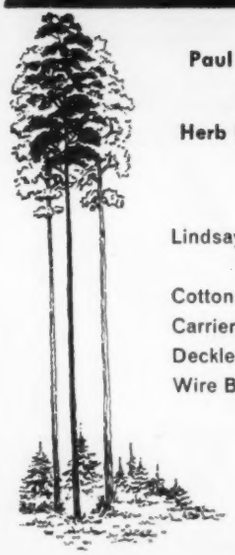
NORTHWEST COPPER WORKS

1303 N. RIVER STREET
PORTLAND 12, OREGON

PHONE
AT 4-2191

WILLIAMS-GRAY COMPANY

221 North LaSalle Street, Chicago 1, Illinois



Paul Foster • Peter Talbot
Ross Lawrence
Herb Fishburn • Wes Gallup
Bill French

Lindsay & Niagara Wires,
Knox Woolen Felts
Cotton & Asbestos Dryer Felts,
Carrier Rope • Splicing Tissues,
Deckle Webbing • Apron Cloth
Wire Brushes

when you're handling CHIPS

nothing beats air!

Specifically . . . nothing beats CONVEYAIR for moving chips, hog fuel, planer shavings, sawdust or other granular materials . . . any distance, anywhere, at LESS COST.

Write for full details

pneumatic materials handling systems
Conveyair

Conveyair (Can.) Ltd. 125 W. 1st St., North Vancouver, B.C. YOrk 1166
Conveyair Inc. 221 S.W. Washington Ave., Portland 5, Ore. CApitol 2-1291

Don't overlook these ways to cut production costs!

OK BATTLE AXE CHIPPER KNIVES

. . . always deliver maximum production of uniform cookable chips.

Also available: OK Hog Knives
Veneer Knives • Planer Knives

THE OHIO KNIFE CO.
CINCINNATI 23, OHIO

FELKERWELD
BY
FELKER

TUBING AND FITTINGS IN STAINLESS STEEL, MILD STEEL, GALVANIZED, COPPER, ALUMINUM BRONZE, MONEL.

Our more than 40 years' experience in fabricating plain steel, applied to stainless steel when it came into the market enabled us to develop our FELKERWELD PROCESS for ENDURANCE, with such metals as Stainless Steel, Stainless Clad Steel, Inconel, Monel, Nickel, Copper and Aluminum Bronze. FELKERWELD is your guarantee for quality and workmanship.

FELKER BROS. MANUFACTURING CO.
MARSHFIELD, WISCONSIN

RESLIN
SUCTION BOX
COVERS . . .

MAKE YOUR SUCTION BOX COVER A RESLIN AND GAIN ALL THE ADVANTAGES OFFERED BY THIS NEW DEVELOPMENT IN SUCTION BOX COVERS.

PROVEN
BY
TEST

Write for Further Information
APPLETON WOOD PRODUCTS CO.
APPLETON - WISCONSIN

SULPHITE MILL ACID PLANTS
SEMICHEMICAL LIQUOR PLANTS

SULPHUR BURNING PLANTS
GAS COOLERS—SURFACE AND SPRAY TYPE
JENSSEN TWO TOWER ACID SYSTEMS
JENSSEN PRESSURE ACID SYSTEMS
JENSSEN AUXILIARY PROCESS TOWERS
RECOVERY PLANTS—COOKING ACID

SOLUBLE BASE ACID PLANTS

JENSSEN SO_2 ABSORPTION SYSTEMS
FOR BLEACH PLANT APPLICATION
SULPHUROUS ACID PREPARATION
COMPLETE DESIGN AND INSTALLATION

G. D. JENSSEN CO. INC.
MASSENA, NEW YORK
Western Representative:
James Brinkley Co., 417-8th Ave. So., Seattle, Wash.
FOUNDED 1915

THE MOORE & WHITE COMPANY

330 EAST HUNTING PARK AVENUE . PHILADELPHIA 24, PA.

CUSTOM-BUILT MACHINES FOR
MAKERS OF PAPER AND PAPERBOARD

Represented on the West Coast by Stephen Thurlow Company
1731 First Avenue, South, Seattle 4, Wash.

RAY SMYTHE CO.
Pulp and Paper Mill
Machinery and Supplies

REPRESENTING:
RICE BARTON CORP.—HEPPENSTALL CO.
SHENANGO-PENN MOLD CO.
LANGDON COLLAPSIBLE WINDER SHAFTS
McKEY PERFORATING CO., INC.
ATWOOD-MORRILL CO.
SMYTHE MULTIVAT FLAT SCREENS
CARTHAGE MACHINE COMPANY
HORTON MANUFACTURING CO., INC.
SUTHERLAND REFINER CORP.
PULP REFINING SYSTEMS
EDWARD E. CONN SAW & TOOL WORKS
729 S. W. ALDER STREET, PORTLAND 5, ORE.

EXCELSIOR
KNOX
Woolen Co.
Camden Me.
FELTS & JACKETS

"EXCELSIOR" FELTS

The Trademark of Felts of Superior Quality
for Every Grade of Pulp and Paper

KNOX WOOLEN COMPANY
CAMDEN, MAINE
Pacific Coast Agents
DAN E. CHARLES AGENCY, 1331 Third Avenue, Seattle, Wash.

Directory of Consultants and Engineers

THE LUMMUS COMPANY
for over half a century
Engineers and Constructors for Industry
PULP AND PAPER MILL DIVISION
design, construction, reports, consultation
New York, Chicago, Houston, Montreal, London, Paris, The Hague

Roderick O'Donoghue & Company
Consulting Engineers to the Pulp and Paper Industry
PULP MILLS—PAPER MILLS
IMPROVED PROCESSES — DESIGNS — REPORTS
420 Lexington Avenue — New York City 17

ALVIN H. JOHNSON & CO.
INCORPORATED
●
Pulp and Paper Mill
Consulting and Designing Engineers
Serving the Pulp & Paper Industries Since 1929
●
415 Lexington Ave. — New York 17, N. Y.

J. E. SIRRINE CO.
Greenville, South Carolina
Engineers
PAPER & PULP MILLS • WASTE DISPOSAL • TEXTILE MILLS • APPRAISALS • WATER PLANS • STEAM UTILIZATION • STEAM POWER PLANTS • HYDRO-ELECTRIC • REPORTS

STEVENSON & RUBENS
CONSULTING ENGINEERS
761 Olympic National Bldg. — Seattle 4, Wash.
MU 1244
PULP AND PAPER MILL DESIGN

THE RUST ENGINEERING CO.
PITTSBURGH • BIRMINGHAM • BOSTON
Offices in Principal U.S. and Canadian Cities
Engineers · Constructors

Complete Service for PULP and PAPER MILLS including all auxiliaries and byproducts.
Surveys • Reports • Design • Construction • Modernization

CHAS. T. MAIN, INC.
ENGINEERS
Process Studies, Design, Specifications and Construction Supervision
PULP AND PAPER MILLS
Steam Hydraulic and Electrical Engineering
Reports, Consultation and Valuations
80 Federal Street — Boston 10, Mass.

CONSULTING ENGINEERS
SW
CONSULTING ENGINEERS
FOREST PRODUCT INDUSTRIES
THERMAL POWER PLANTS
INDUSTRIAL AND PROCESS
SWANSON WRIGHT & CO. ENGINEERS LTD.
2210 West 12th Ave. VANCOUVER 9, B.C. CEdar 1154

CENTRAL STATES ENGINEERING, Inc.
Consulting Engineers
Pulp and Paper Mills and Allied Operations,
High Yield Pulping Processes, Steam,
Power and Distribution, Waste Treatment,
Water Supply. Survey and Reports.
1000 West College Ave. — Appleton, Wisconsin

STONE & WEBSTER
ENGINEERING CORPORATION
Design and Construction
PULP and PAPER MILLS
CHEMI-GROUNDWOOD PLANTS
REPORTS
APPRAISALS
CONSULTING
ENGINEERING
NEW YORK BOSTON CHICAGO PITTSBURGH HOUSTON SAN FRANCISCO LOS ANGELES TORONTO

LOCKWOOD GREENE, Engineers
Est. 1832
Plant Location • Site Studies • Paper • Pulp Mills
Mill Expansion • Water • Waste • Steam • Electric
Power and Utilization • Reports • Appraisals
New York 17, N. Y. 41 East 42nd St.
Spartanburg, S. C. Montgomery Bldg.
Boston 16, Mass 316 Stuart St.

W. H. RAMBO
CONSULTING ENGINEERS
For All Wood Industries
STUDIES—DESIGN—SUPERVISION
Loyalty Bldg., Portland 4, Oregon—Capitol 3-5101

JOHN G. HOAD & ASSOCIATES, Inc.
CONSULTING ENGINEERS
Studies, Reports, Design, Field Supervision
Cold Caustic • Semi-Chemical • Sulphite • Sulphate
NSSC Recovery • Chlorine Dioxide • Bleaching
Waste Reduction
PAPER MILLS — STEAM & ELECTRIC POWER
8 East Michigan Ave., Ypsilanti, Mich.

6716 Savannah Ave
ENGINEERS
ketco
incorporated
Complete machine design and specifications — studies — cost estimates — drive layout — controls system design and fabrication. Consultation and engineering of individual machine components or total installation from headbox to winder.
Cincinnati 39, Ohio
WEbster 1-7100
DESIGNERS

Pulp and Paper Specialists
CALKIN & BAYLEY, INC.
Industrial Consultants
50 East 41st St., — New York 17, N. Y.
Lexington 2-1954

ENGINEERING PRODUCTS COMPANY Inc.
AUTOMATED ROLL HANDLING
Consulting and Contracting Engineers
122 South Michigan Avenue
CHICAGO 3, ILLINOIS
Telephone WAbash 2-8364

TREE FARM MANAGEMENT SERVICE, INC.
Consulting Foresters
FOREST INVENTORIES, MANAGEMENT PLANS
UTILIZATION & RAW MATERIAL SURVEYS
1166 7th Ave. West — Eugene, Oregon
Member, Association of Consulting Foresters

PULP & PAPER

ADVERTISERS' INDEX

Adell Chemical Co. 84
Alaskan Copper Works 172
Allied Chemical & Dye Corp., Nitrogen Div. .... inside front cover
Louis Allis Co. 76
Allis-Chalmers Mfg. Co. 109
Alloy Steel Products Co. 89
American Cyanamid Co. 4
American Potash and Chemical Corp. 106
Anheuser-Busch, Inc. 145
Appleton Machine Co. 80
Appleton Wire Works, Inc. 102
Appleton Wood Products 175
Appleton Woolen Mills 68
Asten-Hill Mfg. Co. . inside back cover

Badger Machine Co. 113
Bailey Meter Co. 96
Baltimore & Ohio Railroad 107
Bauer Bros. Co. 151
Beloit Iron Works 69-72
Bird Machine Co. 2
Black-Clawson Company 98-99
John W. Bolton & Sons, Inc. 14
Brown Company 92
Buckeye Cellulose Corp. 8
Buffalo Pumps 94
Bulkley Dunton Organization 16

Carboline Company 149
Carpenter Steel Co. 79
Carthage Machine Co. 124
Chemipulp Process Inc. 167
Clark-Aiken Co. 163
Classified Advertising 166-67
Cleveland Worm & Gear Co. 10
Clinton Corn Processing Co. 150
Combustion Engineering, Inc. 28
Conveyair Inc. 174
Cooper Alloy Corp. 97, 169
Crane Company 22

Damascus Tube Co. 20
DeZurik Corp. 168
Dilts Machine Works 98-99
Henry Disston Div., H. K. Porter Co. 171
Dominion Engineering Co. Ltd. 108
Dorr-Oliver, Inc. 126-27
Draper Brothers Co. 144
Drott Div., International Harvester Co. 111
J. H. Dupasquier 167

Eastwood-Nealley Corp. 143
Ebasco Services, Inc. 173
Emerson Mfg. Co. 14
English China Clays Sales Corp. 172
Euclid Crane & Hoist Co. 174

Falk Corp. 155
Felker Bros. Mfg. Corp. 175
Fischer & Porter Co. 82
Fitchburg Screen Plate Co. 172
Ford Motor Co., Tractor & Implement Div. 112
Fuller Co. 146

General Electric Co. 104-5
Gilbert & Nash Div., Appleton Machine Co. 152
Glidden Co. 95
Gottesman & Co., Inc. 6
Green Bay Foundry & Machine Works 170
Gulf States Paper Corp. 103

Hanchett Manufacturing Co. 168
Heikkinen Machine Co. 169
Hoke, Inc. 171
Homelite Corp. 114
Hooker Electrochemical Co. 131
Horton Mfg. Co. 167
F. C. Huyck & Sons 136-7
Hyster Co. 148

Improved Machinery Inc. 33
Ingersoll-Rand Co. 135
International Harvester Co. 111

Jackson Industries 125
G. D. Jenssen Co., Inc. 175
Johns-Manville Corp. 67
Johnson Corp. 171
E. D. Jones & Sons Co. 24-25

Knox Woolen Co. 175

Samuel M. Langston Co. 37
Link-Belt Co. 27
Link-Belt Speeder Corp. 110
Lockport Felt Co. 23
Lodding Engr. Corp. 164
Lyddon & Co., Inc. 101

Manchester Machine Co. 78
Mason-Neilan Div., Worthington Corp. 30-31
Mead Corp. Research Dept. 165
Merrick Scale Mfg. Co. 177
Mettler Instrument Corp. 93
Midwest Piping Co., Inc. 32
Minerals & Chemicals Corp. of America 18-19
Monsanto Chemical Co. 29
Moore & White Co. 175
Morden Machines Co. 26
Morris Machine Works 158

Nash Engineering Co. 160
National Aniline Division 81
Nichols Engineering & Research Corp. 159
Nopco Chemical Co. 138
Northwest Copper Works, Inc. 174

Ohio Knife Co. 174
Owen Bucket Co. 170

Parsons and Whittemore, Inc. 101
Patton Manufacturing Co., Inc. 35
B. F. Perkins & Son, Inc. 74
Perkins-Goodwin Co. ..... back cover
Pneumatic Applications Co. 169

Horace T. Potts Co. 161
Powell River Sales Co. 86
Puget Sound Pulp & Timber Co. 75
Pulp Bleaching 177

Rader Pneumatics Inc. 147
J. E. Rhoads & Sons Co. 132-33
Rice Barton Corp. 1
Ridge Tool Co. 140
Roots-Connersville Blower Div. 87
J. O. Ross Engineering Corp. 130
Ross Midwest Fulton Corp. 21
Rotary Lift Co. 172

St. Regis Paper Co. 153
Scapa Dryers, Inc. 36
Shuler & Benninghofen 170
Simonds Saw & Steel Co. 129
Ray Smythe Co. 175
Solvay Process Div. 91
Southwestern Engineering Co. 173
Sprout, Waldron & Co., Inc. 154
Stebbins Engineering & Mfg. Co. .. 34
Stowe-Woodward, Inc. 90
Sulzer Brothers Ltd. 66

Texas Gulf Sulphur Co. 134
Thew Shovel Co. 115
Thiele Kaolin & Co. 88
Titanium Pigment Corp. 100
Truscon Laboratories 162

U. S. Industrial Chemicals Co. 83
United States Movidyn Corp. 77

Valley Iron Works 85
R. T. Vanderbilt Co. 167
Vanton Pump Div., Cooper-Alloy Corp. 169
Vapo Systems Co. 167
Vollrath Co. 173

Walworth Co. 142
Warner & Swasey Co. 145
Warren Pumps, Inc. 164
H. Waterbury & Sons Co. 156
West End Chemical Co. 128
Western Machinery Co. 166
Westvaco Chlor-Alkali Div. 12
Weyerhaeuser Timber Co. 73
Whiting Corp. 141
Williams-Gray Co. 174

CONSULTANTS & ENGINEERS . 176

Calkin & Bayley, Inc.
Central States Engineering
Engineering Products Co. Inc.
John G. Hoad & Assoc.
Alvin H. Johnson & Co.
Ketco Inc.
Lockwood Greene Engineers
Lummus Co.
Chas. T. Main, Inc.
Roderick O'Donoghue & Co.
W. H. Rambo
Rust Engineering Co.
J. E. Sirrine Co
Stevenson & Rubens
Stone & Webster Engineering Corp.
Swanson Wright & Co., Engineers
Tree Farm Management Service

MERRICK FEEDOWEIGHT
for Accurately Feeding
Salt Cake and Lime, by Weight
Write for Bulletin 551
MERRICK SCALE MFG. CO. 185 Summer St. Passaic, N. J.

PULP BLEACHING COMPANY
625 Alaska St., Seattle 4, Wash.
EQUIPMENT FOR
CELLULOSE PURIFICATION
AND RELATED PROCESSES

The LAST WORD PULP & PAPER EDITORS' PAGE

—New Yorker magazine.

You'll Feel Better if You Use Woodpulp . . .

Over 90% of tire cord is made of rayon, in turn made of dissolving woodpulp. It is quite obvious that the woodpulp product is better than the cord made with non-cellulosic fibers.

But a recent comment in *New Yorker* really brought the point home: "The American Rayon Institute has come up with the phrase 'morning thump' to describe the matutinal sensation of people who ride on the ten per cent of automobile tires that aren't made with rayon cord. This is a splendid name for an affliction, and we hate to see it wasted on such a specialized minority. We often feel peculiar on arising, even when miles from a highway, but we've never had the proper term to epitomize our plight. Morning thump it is, all right, and we suggest that the American Rayon Institute turn this useful name over to the American Medical Association."

Besides, woodpulp base tire cord doesn't heat up as much as the synthetic fiber types—and you want to be safe on the highway, don't you?

"Biographer" for Clinch County

Bill Diehl, who did the profile type story this month on Clinch County, champion pulpwood county of the South, is a former feature writer for the Atlanta *Constitution*—used to cover police work. His favorite pastime then was riding the night watch with Atlanta's police chief. Naturally, close escapes were routine. It'll be a long time, though, before he forgets a courtroom scene where a dreaded criminal had been sentenced to life—with a few assists from our young Mr. Diehl. As the convicted criminal sidled past, he whispered—in a matter of fact tone: "If I ever get out I'll kill you."

"Well, we did tell you last month that we have "to run like the devil" to keep up with the news. Now, you know one reason why.

Imagination in Research

Maybe there is something in this for pulp and paper researchers.

Roy O. Eastman, whose distinguished organization does editorial readership research for PULP & PAPER magazine, told us the story the other day of a boy who found a missing cow in jig-time.

Asked how he managed it so quickly, he answered, "I just figured out where I'd go if I was a cow and there she was."

That boy had the first qualification for a research man, an active imagination.

He had another primary qualification for research—he knew cows well enough to imagine himself to be one.

Also, be it noted in passing, he didn't write the cow a letter, he went out and interviewed her—in person. (Incidentally, that's the way P&P editors operate, too.)

Behind the Scenes . . .

It occurs to us that PULP & PAPER readers might enjoy a moment "behind the scenes" in our reporting routine. Our field-written stories are by a staff which has "home offices" right in the middle of every great pulp and paper region of North America. That editorial organization, in itself, is unique for this industry.

Here's an excerpt from a memo written by one editor, giving a little background on two or three stories he was working on. Place names are fictitious:

". . . this was kind of a goofed up deal. I was out of town from Sept. 22 through Oct. 7—hence had to write all my copy on the road. The pulpwood story was written in three hotels and cleared rather dramatically. I chased down the woodlands manager in Red Gulch, during a driving rainstorm and had him check it over. The safety story was written enroute. Couldn't get the pix done because I was in Lower Slabovia.

"To give you an idea of its size, if a big truck goes through on a hot summer day the entire town disappears in the dust.

"They didn't even have a drugstore. I had to make a long distance call one night and it took me 15 minutes to figure out that you had to leave the phone ON the hook while cranking the little thing for the operator. And that's no joke. It was really one of those old-fashioned crank-for-attention jobs."

It is all in a day's work!

Why Editors Turn Gray . . .

Last month we spoke about ingredients for a better publication. Sometimes we have problems similar to those of the (pre-automation) paper industry: a beaterman turns his back . . . and one of the batch ingredients is missing.

Last month the missing ingredient (one production manager) was having a good time in Europe—and, as it must to all publications sooner or later, we made a booboo. Two pictures appeared with the wrong captions. This month our missing ingredient is back at the beater vat, and here is how the pictures should have been run . . .

Henry S. Gilbert

. . . Staff sales engineer, John W. Bolton & Sons and Emerson Mfg. Co. Div., Lawrence, Mass. Will coordinate sales, engineering activities.

W. G. Reynolds

. . . Vice pres./mfg. and director, Gulf States Paper. Will be responsible for Gulf States' operations at Tuscaloosa and Demopolis.

Hollow club used
in old Chinese theatrical productions,
with the Yang-Yin symbol cut out
on all four sides.

This symbol (Yang-Yin) represents T'ai-chi, the old Chinese *Ultimate Principle*, and as such, *perfection*. As the Asten-Hill trademark it symbolizes *perfection* in paper mill DRYER FELTS.

Name and trademark registered

ASTEN-HILL MFG. CO.
Philadelphia 29, Pa.
Walterboro, S.C.
Salem, Ore.

ASTEN-HILL LIMITED
Valleyfield, Quebec

PULP

Perkins-Goodwin Co.

Established 1846

PULP AND PAPER MARKETING-MANAGEMENT

589 FIFTH AVENUE, NEW YORK 17, N. Y.

CHICAGO, ILL. • LUFKIN, TEXAS • LOCKPORT, LA. • SAN FRANCISCO, CAL. • STOCKHOLM, SWEDEN

PAPER